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**Responses to Public Comments on the Proposed PSD Permit Major
Modification for Sierra Pacific Industries- Anderson Division**

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I. Introduction

The U.S. Environmental Protection Agency, Region 9 (EPA) proposed to issue a major modification of the Prevention of Significant Deterioration (PSD) permit to Sierra Pacific Industries (SPI) for the SPI-Anderson Division facility (Facility) on September 14, 2012. The public comment period for the proposal (Proposed Permit)¹ began on September 13, 2012 and closed on October 17, 2012. During the public comment period EPA took comments on the proposed permit modification.

The purpose of this document is to respond to every significant issue raised in the public comments received during the public comment period and explain what changes have been made in the final permit (Final Permit) as a result of those comments.

EPA announced the public comment period through a public notice published in the *Record Searchlight* (in English only) on September 14, 2012 and on Region 9's website (in English) on September 13, 2012. EPA also distributed the public notice to the necessary parties in accordance with 40 CFR Part 124, including notices sent by mail on September 12, 2012 and email on September 13, 2012. Parties notified by EPA included agencies, organizations, and public members for whom contact information was obtained through a number of different methods, including requests made directly to EPA through Region 9's website (or through other means) from parties seeking notification regarding permit actions in California, within the Shasta County Air Quality Management District (District), within Shasta County; and other parties known to EPA that may have an interest in this action. EPA provided notice to numerous government agencies in accordance with 40 CFR Part 124, including, but not limited to, the California Energy Commission (CEC), the District, and other local neighboring air districts.

The Administrative Record for the Proposed Permit modification was made available at EPA Region 9's office. EPA also made the Proposed Permit, the Fact Sheets and Ambient Air Quality Impact Report (AAQIR) and other supporting documents available on Region 9's website.

During the public comment period, EPA received 15 comment letters and three requests for a public hearing. Responses to the public comments received are available in the following sections of this document.

EPA did not receive comments regarding the sufficiency of modeling for pollutants projected to have impacts below significant impact levels (SILs) for PM_{2.5}. However, because of recent actions by EPA and a recent decision from the United States Court of Appeals for the District of Columbia Circuit, *Sierra Club v. EPA*, No. 10-1413, 2013 WL 216018 (Jan. 22, 2013), we are supplementing our analysis of the Project's impacts on the annual PM_{2.5} National Ambient Air Quality Standards (NAAQS) and PSD increments for PM_{2.5}.

SILs are numeric values that may be used to evaluate whether a proposed major source or modification will cause or contribute to a violation of NAAQS or PSD increment. *See* 72 Fed.

¹ We note that EPA's permitting regulations at 40 CFR Part 124 refer to proposed permits as "draft permits." *See* 40 CFR 124.6.

Reg. 54112, 54138 (Sept. 21, 2007). The EPA has observed that if the source's modeled impacts are below the level of the SIL for the relevant pollutant, this showing is often sufficient to demonstrate that the source will not cause or contribute to a violation of the NAAQS. 72 FR at 54139. However, in the preamble of the final rule establishing SILs for PM_{2.5}, EPA cautioned that there can be circumstances where a showing that the air quality impact of a proposed source is less than the PM_{2.5} SILs is not sufficient by itself to demonstrate that a source will not cause or contribute to a violation of the NAAQS or increment. 75 FR 64864, 64892-94 (October 20, 2010); *see also Sierra Club*, 2013 WL 216018, at 5 (granting EPA request to vacate and remand regulatory text at 40 CFR 52.21(k)(2) because it does not allow permitting authorities the discretion to require a cumulative impact analysis, notwithstanding that the source's impact is below the SIL, where there is information that shows the proposed source would lead to a violation of the NAAQS or increments).

The AAQIR and further analysis included here show that the Project does not present the type of situation in which existing air quality in the affected area is already close to the NAAQS or PSD increment, such that a source with an impact below the PM_{2.5} SILs could nevertheless cause or contribute to a violation of the PM_{2.5} NAAQS or increment. As explained below, EPA's conclusions that the Project will not cause or contribute to a violation of the NAAQS are supported by the background concentrations of PM_{2.5} in the area, modeling, and other factors. A cumulative impact analysis was not considered to be necessary to this conclusion.

Table 8.4-2 of the AAQIR shows that emissions from the Project are predicted to be below the SIL for PM_{2.5} (annual). *See* online docket #III.02, *SPI-Anderson Ambient Air Quality Impact Report_12SEP12* at 33. Table 8.2-1 of the AAQIR provides the maximum background concentrations of PM_{2.5} that may be affected by the Project's emissions. *See* AAQIR at 28. For PM_{2.5} (annual), where the Project's modeled impact was below the SIL, the maximum background concentrations measured in the area are well below the NAAQS. The difference between the PM_{2.5} (annual) background concentration in the area and the NAAQS is 9.7 µg/m³ which is significantly greater than the PM_{2.5} annual SIL of 0.30 µg/m³. As noted in Section 8.4.3.2 of the AAQIR, adding the Project's predicted impact of 0.27 µg/m³ to the existing background concentration yields a total concentration of 5.57 µg/m³ which is still less than one third of the NAAQS and leaves roughly 9.4 µg/m³ remaining before the PM_{2.5} (annual) NAAQS is threatened. *See* AAQIR at 35.

In addition, other than SPI-Anderson's projected emissions increases, there have been no actual emissions changes of PM_{2.5} from any new or modified major stationary source on which construction commenced after October 20, 2010, the major source baseline date for PM_{2.5} according to 40 CFR 52.21 (b)(14)(i)(c). *See* online docket #III.02, *SPI-Anderson Ambient Air Quality Impact Report_12SEP12* at 34. Since the only source to consume PM_{2.5} increment in the area is SPI-Anderson, the applicant appropriately considered only the allowable emissions increase from the SPI-Anderson project in the annual PM_{2.5} increment analysis. Moreover, the predicted impact of the source for the PM_{2.5} (annual) NAAQS is well below the increment in the area.

The applicant's analysis also conservatively assumed that all PM emissions were comprised of PM_{2.5} emissions, and used PM emissions data as input to the modeling. As shown in Table 1.6-1

of EPA's *AP-42 Fifth Edition, Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources*, PM_{2.5} emissions from wood fired boilers equipped with electrostatic precipitators are expected to be roughly 65% of all filterable particulate emissions. Thus, actual PM_{2.5} impacts from the Project are expected to be considerably lower than those indicated in the modeled results and would not, therefore, be expected to cause or contribute to a violation of the PM_{2.5} (annual) ambient air quality standard or increment.

II. EPA's Responses to the Public's Comments

This section summarizes all significant public comments received by EPA and provides our responses to the comments. The full text of all public comments and many other documents relevant to the permit can be accessed online through EPA's website at <http://www.epa.gov/region09/air/permit/r9-permits-issued.html>.

Comments Submitted by Mr. Russell Wade

- Comment:** Our planet is heating as we put more and more carbon into the air trapping the infra-red rays of the sun and dehydrating our forests in the northern Calif. 2011 set record temperatures in 15,000 areas in the U.S. we have had over a hundred square miles of forests burn, (this year) putting up even more carbon- just as Sierra Pacific clear cuts raise temperatures- a co-generation plant is a good idea for creating local energy- putting 300,000 tons of CO₂ in the air per year is stupid- this plant could be designed so the carbon output can be sequestered. There is a big denial about the facts surrounding global warming we need to be reversing our carbon output-as presently designed the plant is only going to boost our carbon output.

Response: The commenter has suggested that the new cogeneration unit should be required to sequester the carbon dioxide (CO₂) emissions resulting from the combustion of various fuels. As noted in the Ambient Air Quality Impact Report (AAQIR), the modification was not subject to best available control technology (BACT) for the pollutant greenhouse gases (GHG) which is comprised of six gases, including CO₂. Although the proposed modification identifies an increase in GHG emissions that exceeds the "subject to regulation" threshold of 75,000 tpy CO₂e and GHG significance rate of 0 tpy, EPA's *Deferral for CO₂ emissions from Bioenergy and Other Biogenic Sources under the Prevention of Significant Deterioration and Title V programs* (76 FR 43490 July 20, 2011) applies to this project.

Comments Submitted by Mr. C.T. Carden

- Comment:** I have lived in N. Calif since 1964- in the forested areas. Our woods are crambled full of vegetation waiting for a forest fire. There is a great need to deforest (clean up) many of the choked areas. S.P.I (Sierra Pac.) can help save (manage) these areas by burning ("hog fuel") at their Anderson Co-Gen plant- Everybody wins with this plant for gen. electricity. We need electricity and cleaning up the forest at the same time. Please allow the And. Calif (Riverside Ave.) plant to build the co-gen. plant for the benefit of everybody. We need the jobs too. Thank you.

Response: The modification allows for the construction of a cogeneration unit at the existing SPI-Anderson facility. Fuels to be combusted in the new unit will be restricted to biomass and natural gas as detailed in the final permit.

Comments Submitted by Ms. Joy L. Newcom

3. **Comment:** Please Please Please DO NOT PERMIT Sierra Pacific I. Please Please Please outlaw and shut them down. Their ATROCIOUS Air Quality in this sink-bowl surrounded by 10,000+ foot mountain ranges, absolutely, cannot, handle any more particulate or chemical pollution!!! We've become way too populated with retired, disabled, infants, children and sensitive populations. S.P.I. need to build its plant in Nevada, or Sand, CA (by desalination plant.)

Response: EPA's permit action is for granting SPI the authority to construct new emission units at the existing SPI-Anderson location. Shasta County is in attainment or unclassifiable for all pollutants regulated under the PSD program. Moreover, The Clean Air Act identifies two types of NAAQS. Primary standards provide public health protection, including protecting the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary standards provide public welfare protection, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings. In the AAQIR for this action, EPA demonstrated air pollution emissions from the new cogeneration unit will not cause or contribute to violations of any NAAQS or any applicable PSD increments for the pollutants regulated under the PSD program.

Comments Submitted by Mr. Marshall Knauss

4. **Comment:** I live across the highway from S. P. in Anderson and the last week or so I've noticed alot of brown smoke coming out of the generating facility they already have. My question is have they only started running it in the day time recently. I don't ever remember seeing the smoke. I figured they only ran at night .I would have to be against it if we will be increasing the amount of brown smoke--- SMOG-- IF YOU WILL INTO THE AIR.

Response: EPA's permit action is for granting SPI the authority to construct new emission units at the SPI- Anderson location. As stated in response to comment#3, this modification is not expected to cause or contribute to any NAAQS violation. EPA is not aware of increased air emissions at the SPI-Anderson facility at this time. However, after discussions with the District regarding this issue, EPA received the following information from the District on October 1, 2012:

[T]here is a small 6 [megawatt] cogeneration plant located adjacent to SPI, near the northwest corner. This facility has undergone some retrofitting and is currently undergoing start-up testing. An Authority to Construct for Anderson Plant, LLC (Kiara Solar) was issued by the District on 10/1/10. This plant was included in the emission modeling during SPI's application and EIR process.

The reason for this notification is to prevent any confusion... that could potentially arise from a passer by who might think that this is the SPI plant. This source is very visible from HWY 273 and people do confuse it with the SPI Anderson plant from time to time.

Comments Submitted by Mr. Ken Archuleta

5. **Comment:** I am in favor of granting the permit modification to allow construction of a 31 megawatt power plant.

Response: EPA's permit action is for granting SPI the authority to construct a new 31 MW emission unit at the SPI- Anderson location, an existing PSD major stationary source of air emissions.

Comments Submitted by Mr. Ed W. Coleman

6. **Comment:** Received your latest info on the "sierra Pacific Ind." Anderson Calif. Division modification permit! They have been nothing short of a major polluter in the past, and have shown gross lack of compliance! We proved this with our own "Citizens for Cleaner Air" contract with a private testing company! If the USEPA uses the proper pollution scale, we feel that environmental justice is served!

Response: It is unclear from the commenter's statement what pollution scale should be considered in relation to this facility with regard to the PSD program. EPA requested public comment on its proposed action relating to the major modification of the PSD permit for SPI- Anderson. EPA's proposed PSD permit would grant conditional approval, in accordance with the PSD regulations (40 CFR 52.21), to SPI to construct and operate a new cogeneration unit at its existing Anderson facility. The AAQIR that serves as the basis for this action which demonstrates that the facility as modified would not cause or contribute to a violation of the NAAQS. As discussed in response to comment# 3, the NAAQS were set to provide public health protection, including protecting the health of "sensitive" populations such as asthmatics, children, and the elderly.

Comments Submitted by Ms. Mary Olswang

7. **Comment:** I am writing with concerns about the SPI proposed cogeneration plant in Anderson, CA, Shasta County. I oppose the project.

It is estimated this plant will emit 330,000 tons of greenhouse gases annually. It is counter productive for the EPA to approve such projects while also supporting clean air policies. In this age, we cannot afford to dump more toxic waste into our atmosphere.

Are there not alternative to disposing of their waste, like composting? Enriched soils can be used for growing new trees.

Response: As stated in the AAQIR, the proposed modification identifies an increase in GHG emissions that exceeds the "subject to regulation" threshold of 75,000 tpy CO₂e and GHG significance rate of 0 tpy. However, EPA's *Deferral for CO₂ emissions from Bioenergy and Other Biogenic Sources under the Prevention of Significant Deterioration and Title V programs* (76 FR 43490 July 20, 2011) applies to this project. Since the non-deferred GHG emissions for this project are 38,252 tpy CO₂e, the modification is not subject to BACT for GHG and a resulting control technology review for GHG was not

conducted. The deferral for CO₂ emissions from bioenergy and biogenic sources under the PSD program was applied to those CO₂ emissions that result from the combustion of biomass.

Comments Submitted by Ms. Joan Coleman

8. **Comment:** I wish to express my opposition to the permit before you to build a 31 megawatt wood burning power plant north of Anderson. As you know this will be in addition to the 6 wood burning power plants in Shasta County. The plant will emit about 330,000 tons of greenhouse gases annually. All 6 plants would then be generating about 2.16million tons of greenhouse gases annually. The State says Shasta County already receives 26.5 TON of carbon monoxide released into the air DAILY. It is unreasonable to allow this plant to increase our air pollution The EPA should deny the permit.

Response: Please see response to comment #7 in regard to GHG emissions.

The PSD program is intended to protect air quality in “attainment areas”, which are areas that meet the NAAQS. The District is currently in attainment of the NAAQS for CO. As stated in the AAQIR, air pollution emissions from the new cogeneration unit will not cause or contribute to violations of any NAAQS or any applicable PSD increments for the pollutants regulated under the PSD permit, including CO.

Comments Submitted by Ms. Heidi Strand of Citizens for Clean Air

9. **Comment:** The commenter states that the cogeneration unit must be issued a “new PSD permit.” EPA is clearly violating the intent of Executive Order #12898 with regard to Environmental Justice by circumventing the entire PSD permitting process. The commenter also requested a public hearing on a number of issues, ranging from how BACT is applied to information with regard to environmental violations at the facility and air pollution credits available in Shasta County. The commenter states that EPA disenfranchises members of the public from the public process by not holding a public a hearing.

Response: SPI- Anderson is undergoing a physical change and or change in the method of operation that results in a significant emissions increase of several regulated NSR pollutants at the existing major stationary source. This corresponds to the definition of major modification as defined in 40 CFR 52.21(b)(2)(i). The new equipment at the site is being issued a PSD permit. *See* online docket #III.01, *SPI-Anderson Proposed PSD Permit Modification_12SEP12*. EPA is requiring the source to satisfy the requirements under 40 CFR 52.21 as documented in the AAQIR, it is unclear why the commenter believes that EPA is circumventing the PSD permitting process.

Executive Order 12898, entitled “Federal Actions To Address Environmental Justice in Minority populations and Low-Income populations,” states in relevant part that “each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.” Section 1-101 of Exec. Order 12898, 59 Fed.

Reg. 7629 (Feb. 16, 1994). The AAQIR concluded that the proposed modification will not cause or contribute to air quality levels in excess of health standards for the pollutants regulated under EPA's proposed PSD permit for the proposed modification, and that the project will not result in disproportionately high and adverse human health or environmental effects with respect to these air pollutants on populations residing near the SPI- Anderson site, or on the community as a whole.

EPA reviewed demographic data for the community surrounding the immediate project area prior to proposing the permit and issuing public notification materials in accordance with 40 CFR Part 124. In particular, EPA considered socioeconomic, linguistic isolation, education and other relevant factors to help inform our public outreach activities. Prior to noticing the proposed permit decision, EPA conducted a review of U.S. Census Data to determine whether outreach materials should be provided in a language other than English. EPA's review found that the cities of Anderson and Redding, along with Shasta County had less than 2.5%, 1.5% and 1.5% of all households listed respectively as linguistically isolated. Moreover EPA contacted the local air district to learn whether the district had received complaints, concerns, or requests regarding the publication of public notices in a language other than English for any prior permitting actions. District personnel stated that they had not received such complaints, concerns, or requests. Based on EPA's review and conversations with the local air district, EPA determined that outreach materials would not be translated into another language. EPA's public engagement activities included the mailing of roughly 800 public notices in the area surrounding the SPI- Anderson and in the state of California, emailing roughly 650 recipients and publishing a notification of the Project in the *Record Searchlight* on September 14, 2012. The *Record Searchlight* also published a separate article about the Project modification on September 22, 2012..

Pursuant to 40 CFR 124.12, EPA must hold a public hearing if it, on the basis of requests, determines there is a significant degree of public interest in a draft permit. After distributing the public notice to the necessary parties in accordance with 40 CFR Part 124 and additional members of the public, EPA received comments from 15 members of the public, including the applicant, and three requests for a public hearing. None of the requests for a public hearing demonstrated that there was significant public interest in the Project; therefore EPA did not hold a public hearing. EPA reviewed and responded to all written comments from the public received during the public comment period.

With respect to the comments regarding air pollution credits, the PSD program is intended to protect air quality in "attainment areas", which are areas that meet the NAAQS. The District is currently in attainment or unclassifiable for all of the NAAQS. The PSD permitting program does not require emission offsets, commonly referred to as air pollution credits, to be surrendered prior to construction of an applicable source.

Comments Submitted by Mr. Rob Simpson of Helping Hand Tools

- 10. Comment:** On September 26, Mr. Simpson requested an extension of the public comment period because this is the first time he would provide comments on this type of facility and that the record contained numerous materials that could not be adequately reviewed within the allotted time.

Response: Our September 28, 2012 response is copied below:

Dear Mr. Simpson,

We received your questions regarding the proposed PSD permit modification for SPI-Anderson. Let me first address your request for a public comment period extension. In order for EPA to extend the public comment period beyond the currently scheduled end date of October 17, 2012, a commenter must adequately justify why additional time is required in order to comment on the proposed action. While your request states that there are many documents to review, the number of documents for this project is no different than any other project, and you have not demonstrated why there would be a significantly greater burden to review the documents for this project. Thus, we do not plan to extend the public comment period at this time.

Finally, regarding the application materials, they can be found in the online Docket no. EPA-R09-OAR-2012-0634. The majority of the application information can be found in I.01, but additional important materials are also included in I.03, I.05, I.07, I.08, I.25, I.31, I.33, I.34. Document I.08 contains a Greenhouse Gas emissions estimate and discussion. The other items listed above contain additional emissions estimates, modeling information and other relevant material.

Thank you for your interest in EPA's proposed action. I hope you find this information useful.

- 11. Comment:** On October 17, 2012, the commenter requested a public hearing and an extension of the public comment period. The commenter stated that the record is too extensive to review in the allotted time period.

Response: As we stated in our earlier reply to the commenter's first request for an extension to the public comment period, the size of the record for this project is similar to that for other projects, and the commenter did not demonstrate a significantly greater burden to review the documents for this project. With regard to the commenter's request for a public hearing, please see our response to comment #9 above. We note that none of the three requests for a public hearing demonstrated that there was significant public interest to warrant a public hearing.

- 12. Comment:** The commenter stated that EPA only provided an English version of the public notice and that a public notice in Spanish should also have been provided. The commenter claims EPA failed to demonstrate that it notified participants in the State action(s) and the appropriate elected officials. Moreover, the commenter states that the public notice fails to disclose any effect on air quality and the Project's effects in relationship to the NAAQS or at least in gross pollutant weights.

Response: EPA distributed the public notice to the necessary parties in accordance with 40 CFR Part 124, including notices sent by mail on September 12, 2012 and email on

September 13, 2012 and publication in the *Record Searchlight* on September 14, 2012. Parties notified by EPA included agencies, organizations, and public members for whom contact information was obtained through a number of different methods, including requests made directly to EPA through Region 9's website (or through other means) from parties seeking notification regarding permit actions in California, within the District, within Shasta County; and other parties known to EPA that may have an interest in this action. EPA provided notice to numerous government agencies in accordance with 40 CFR Part 124, including, but not limited to, the CEC, the District, and other local neighboring air districts.

40 CFR Part 124 states that public notice of activities shall be given by mailing a copy of the notice to "the chief executives of the city and county where the major stationary source or major modification would be located" and EPA mailed the public notice to the city manager of Anderson, CA and the Chairman and Clerk of the Shasta County Board of Supervisors. It is unclear what the commenter means by "appropriate elected officials" as EPA mailed officials at the county and city level.

The translation of public notices is not required by 40 CFR Part 124, and EPA determined, after discussing the public notification practices of the District that Spanish translation was not required. Prior to noticing the proposed permit decision, a review of U.S. Census Data in the area found that the cities of Anderson and Redding, along with Shasta County had less than 2.5%, 1.5% and 1.5% of all households listed respectively as linguistically isolated. Moreover, the District stated that it had not received complaints, concerns or requests regarding the publication of public notices in a language other than English for any prior permitting actions.

EPA's public notice included appropriate information as required by the public notice content requirements in 40 CFR 124.10(d). We note that the public notice did state that "[a]ir pollution emissions from the new cogeneration unit will not cause or contribute to violations of any National Ambient Air Quality Standards (NAAQS) or any applicable PSD increments for the pollutants regulated under the PSD permit."

- 13. Comment:** The commenter states that the facility apparently requires 7 of the 23 megawatts electricity that it can generate. No state authority has, or is, required to make a determination if the electricity in this location is beneficial to the system. The project will interfere with the development of superior solar and wind alternatives. The commenter also states that a solar component should be considered in the BACT analysis.

Response: EPA, the permit issuer for this project, does not have an obligation to independently investigate all possible power generation alternatives, including a no-build alternative. Further, the Environmental Appeals Board has observed the importance of this limitation on the permit issuer's obligation, particularly where the evaluation of need for additional electrical generation capacity would require a rigorous and robust analysis and would be time-consuming and burdensome for the permit issuer. In such circumstances, the permit issuer is granted considerable latitude in exercising its discretion to determine how best to apply scarce administrative resources.

EPA has noted previously that in general, in California, in order to conduct a reasoned analysis to determine the need for new power plants in general, or a specific power plant in particular, either within the State as a whole, or in a particular geographic location within the State, EPA would need to consider a myriad of extremely complex factors and detailed information that EPA has neither the resources nor the expertise to analyze. This reasoning also applies in this case. The Region has the discretion, but is not required, to conduct an independent analysis of the need for all possible power generated by SPI in the context of this PSD permit proceeding. In this case, EPA does not believe that it is appropriate to conduct the type of rigorous and robust analysis that would be required to definitively determine the need for the Project. Even if EPA did have the expertise and resources to conduct such an analysis, the commenter has not provided any information on which to conduct such an analysis.

A solar component for this Project presents a significant departure from the existing facility's operations and the Project's purpose. In this instance, the existing lumber facility will add equipment within its existing physical footprint and utilize the excess biomass at this and other SPI sawmill or lumber operations.

- 14. Comment:** The fuel mix should be considered in the BACT analysis for the project and the analysis fails to consider a different fuel mix. Increased gas use can raise the temperature and reduce emissions through more complete [combustion].

Response: The Project calls for a new cogeneration unit to be located at an existing lumber manufacturing facility. The cogeneration unit will consist of a biomass-fired boiler, a steam turbine, and a generator. According to SPI's 2010 Application, SPI intends to use biomass from existing SPI facilities, as well as in-forest materials and various sources of agricultural and urban wood waste. Therefore, an inherent aspect of the project is that its fuel use be primarily biomass. The new boiler will also be capable of burning natural gas. The permit limits the amount of natural gas to be combusted to 10% of all heat input into the boiler. EPA believes that this limit is appropriate as the combustion within the boiler may need to be stabilized while burning biomass and to assist with the startup and shutdown of the boiler. While EPA recognizes that fuel mixtures affect the emissions of pollutants, it is unclear what mix the commenter is ultimately recommending and where this should be incorporated into the analysis. If the source changed its fuel mixture then numerous other considerations would need to be made, such as whether a boiler is an appropriate alternative and resulting control technologies. Moreover, alternative fuel mixes would change the profile of pollutants emitted in a myriad of ways where some pollutants would increase and others would decrease depending on the exact mixture.

The commenter references different discussions related to the BACT analysis of GHG emissions where biomass could be considered, but the Project was not subject to the PSD program for GHGs because of the restriction to burn predominantly biomass and only up to 10% of natural gas on a 12-month rolling basis. *See* AAQIR at 9.

15. **Comment:** The commenter states that the BACT analysis fails to adequately consider energy efficiency options. There should be no need for cooling towers and their associated emissions to dissipate heat. The heat should be used in the existing kiln or in a new kiln. The commenter also states that the permit should consider the existing kiln as permitted equipment and that the existing kiln should undergo a BACT analysis.

Response: The BACT analysis in the AAQIR for the Project considers energy efficiency options where appropriate. As outlined in *Section 4- Project Description* of the AAQIR, the fuel combusted in the new cogeneration unit will produce steam that will be used in the existing lumber operations and for feeding a turbine that will drive a generator to produce electricity for use on site or for sale to the electrical grid. Utilization of the existing kilns at the facility does not negate the need for heat dissipation that may result from the combustion of additional biomass for electrical generation.

The AAQIR analyzed contemporaneous emissions changes resulting from the Project. As stated in the application, “the installation of the boiler will not increase emissions from any existing emission units at the Anderson mill. There have been no contemporaneous modifications at the Anderson mill.” See online docket #I.01: *SPI-Anderson PSD Permit Modification Application_25MAR10* at 3. As a result, the existing kilns are not expected to undergo a change in the method of operation that would result in an increase in emissions of NSR regulated pollutants. Therefore, the existing kilns were not subject to a BACT analysis.

16. **Comment:** The commenter states that the permit should identify the existing equipment and require its retirement, and that the administrative record demonstrates that the permit should require that existing units should not operate concurrently with the new units.

Response: Table 4-2 of the AAQIR identifies existing equipment. See AAQIR at 7. As noted by the AAQIR, we did not include this existing equipment in EPA’s PSD permit because it is already permitted by SCAQMD. Both permits (SCAQMD’s permit and EPA’s permit) will be in effect and enforceable.

With regard to the commenter’s assertion that existing equipment should be retired, we note that many of the existing emissions units support the existing sawmill operations, and that retirement of these units could essentially result in a shutdown of the mill. Requiring retirement of existing units would be inconsistent with the application submitted to us. We note that SPI’s application analyzed emissions from the Project assuming that the existing boiler would continue to operate; in other words, SPI’s application did not claim any emission reduction credits from shut down of the existing boiler. Generally, if a company chooses to shut down existing equipment, EPA’s PSD regulations will allow the permitting authority to consider emission reductions from the shutdown equipment in projecting emissions increases from the new equipment. If the project’s net emissions remain below EPA’s PSD major modification thresholds, the project would not be subject to federal PSD requirements for BACT, ambient air quality impacts, etc. SPI’s application, however, did not present such a netting analysis, and we have processed it as an application for a major modification requiring a PSD permit. We also note that the commenter did not provide any

legal or factual reasons to explain why he believes that EPA should require the retirement of existing units at the facility, and we are not aware of any in SPI's application or elsewhere in the record.

With regard to the commenter's assertion that the permit should require that existing units not operate concurrently with the new units, we understand the commenter to be referring to concurrent operation of the existing boiler and the new boiler. We note that SPI's 2010 application states that "the existing and proposed boiler would not operate concurrently other than some overlap during startup and shutdown." See online docket #I.01: *SPI-Anderson PSD Permit Modification Application_25MAR10* at 9. Therefore, the application can be understood as stating that SPI will, at times, operate the boilers concurrently. The commenter did not provide legal or factual reasons that would support a permit condition prohibiting concurrent operation, and we are not aware of any in SPI's application or elsewhere in the record.

17. **Comment:** The commenter states that EPA has no authority to modify the underlying State permit.

Response: As explained in our public notice, this permit modification is a modification to an existing PSD permit issued by Shasta County AQMD to SPI in 1994. The original PSD permit was issued by Shasta County APCD, pursuant to a delegation of EPA's PSD permitting authority under 40 C.F.R. Part 52 to Shasta County AQMD. In 2003, EPA rescinded the PSD delegations for several California air districts, including Shasta County. 68 FR 19371 (April 21, 2003). We have not re-delegated PSD permitting authority to Shasta County; therefore, EPA is the PSD permitting authority for this action.

18. **Comment:** The commenter states that the analysis fails to consider the emissions associated with the collection, transport and handling of biomass. Also, the commenter states that a permit condition should require that all associated equipment operates on methane gas or biomass power.

Response: Fuel handling equipment, as stated in the AAQIR, is currently permitted under the existing PSD permit issued by the District. Moreover, mobile tailpipe emissions from the facility are not regulated under the PSD program. The commenter provided no legal or factual basis for his assertion that the permit should include a permit condition requiring that all associated equipment operates on methane gas or biomass power. Such a condition would be technically infeasible. Although the permit limits natural gas heat input on an annual basis, natural gas may be needed during startup, shutdown and for combustion stabilization at multiple times during the facility's operation. Requiring associated equipment to only operate on biomass power or inappropriately limiting the use of natural gas could be detrimental to the equipment used for the facility's normal operation.

19. **Comment:** The commenter states that the analysis fails to consider increased kiln emissions and other operational emission increases. The commenter also states that the project should be based upon a comparison to the actual baseline instead of prior permit levels.

Response: Table 6-1 of AAQIR summarizes estimated emissions from the Project. Contrary to the commenter's assertion, we did not evaluate the Project using a baseline of prior permit levels. SPI stated that the Project will not increase emissions from any existing units. *See online docket # I.01: SPI-Anderson PSD Permit Modification Application_25MAR10* at 4. Moreover, the applicant also stated that emissions increases from fuel handling operations were not projected to increase. *See online docket #I.05: SPI-Anderson_response_to_2nd_EPA_incomplete_letter-final_07SEP10*. Therefore, projected actual emissions from existing units at the SPI- Anderson facility were assumed to be equal to baseline actual emissions.

The Project consists of three new emission units and, consistent with EPA's regulations at 40 CFR §52.21(a)(2)(iv)(c), (d) and (f), we evaluated the Project using an actual emissions baseline of zero for the new emission units. *See online docket # I.01: SPI-Anderson PSD Permit Modification Application_25MAR10*, at Tables 2-1 and 2-2; #I.41: *SPI-Anderson Annual Emissions MEMO_05SEP12*. Tables 2-1 and 2-2 of SPI's 2010 Application and Table 6-1 of EPA's AAQIR summarize the estimated emissions increases from the Project and our conclusions that the Project would exceed the significance levels for CO, NO_x, PM, PM₁₀, and PM_{2.5}. We note that use of the baseline suggested by the commenter would not necessarily lead to additional procedural or substantive requirements for this Project because EPA and SPI analyzed the Project with a baseline of zero – as such, all emissions increases from new equipment were considered in our analysis.

20. **Comment:** The air quality monitoring station 50 miles away.

Response: As was stated in Section 8.4.3.3 of the AAQIR: "Despite its distance from the project site, the monitor from Chico is conservative based on its proximity to a more industrial area at the north end of the Sacramento Valley." In addition, EPA has looked at the traffic counts near SPI- Anderson and near the Chico monitor and observed that they both have similar traffic counts and major highways nearby, I-5 and Highway 99 respectively. Thus, the Chico monitor is not only representative of the background concentrations in the Project area, but also more conservative given its proximity to a more industrialized area and the similar number of traffic counts.

21. **Comment:** The commenter states that EPA failed to identify the environmental justice community in the vicinity of the proposed project. It is inadequate for the EPA to skip this and simply claim no harm to any potential community without notification.

Response: Please see the response to comment #9.

22. **Comment:** The commenter states that the analysis is misleading because it does not disclose that the project intends to burn urban wood or post consumer wood which would be more appropriately burned with a DLN burner.

Response: EPA does not agree that our analysis is misleading. The new boiler will generate electricity from the combustion of biomass and not be permitted to burn waste that

is not considered a traditional fuel. See response to the comment #86 for more detail. In particular, *Condition X.G.1.* in the PSD permit restricts fuel to natural gas and the following:

- a. Untreated wood pallets, crates, dunnage, untreated manufacturing and construction wood debris from urban areas;
- b. All agricultural crops or residues;
- c. Wood and wood wastes identified to follow all of the following practices;
 - i. Harvested pursuant to an approved timber management plan prepared in accordance with the Z'berg-Nejedly Forest practice Act of 1973 or other locally or nationally approved plan; and
 - ii. Harvested for the purpose of forest fire fuel reduction or forest stand improvement.

To the extent the commenter is stating that the new boiler should be equipped with a DLN burner, we note that, as stated in the AAQIR, estimated emissions from a boiler with DLN boilers are higher than the limits we have proposed for SPI's new stoker boiler. See AAQIR at 13.

- 23. Comment:** The commenter states the permit fails to require appropriate ash bunker waste disposal.

Response: We disagree. This PSD permit is intended to protect public health and welfare from actual or potential adverse effects that may reasonably be anticipated to occur from air pollution or from exposures to pollutants in other media that originate as emissions to the ambient air. The commenter did not specify any appropriate additional waste disposal requirements that he believes should be included in the PSD permit. We note, however, that the proposed and final permits include conditions for the wood waste and ash waste storage and transportation. In particular the following conditions in *Section X.F.* contain storage bin and ash transport requirements:

5. Wood waste collection and storage bin leaks shall be minimized at all times. All identified wood waste collection and storage bin leaks, spills and upsets of any kind shall be corrected or cleaned immediately, within 4 hours, as practicable, to correct the leak, spill or upset.
6. Wood waste collection and storage bins shall be emptied on a schedule that ensures that the cyclone-separator system does not become plugged.
7. Wood waste collection and storage bins, not including the fuel shed, shall remain enclosed to mitigate the fugitive emissions from the unloading process.
8. All ash shall be transported in a wet condition in covered containers or stored in closed containers at all times.

- 24. Comment:** The commenter states, "EMx, SCR and Urea should be required."

Response: The BACT analysis in AAQIR for the Project details why EPA is not requiring installation of an EMx or SCR. The commenter did not provide further legal or factual bases for his comment; therefore, it is unclear why the commenter believes this alternative control technologies should be required.

25. **Comment:** The commenter states that consideration of the McNeil facility is entirely speculative and that additional analysis is required to distinguish the SPI project from the McNeil facility.

Response: We disagree. Our BACT analysis considered the State of Vermont's permit for the McNeil Generating Station (McNeil), which has a stoker boiler controlled by regenerative selective catalytic reduction (RSCR) technology. The permit for the McNeil facility imposes several NO_x limits, including Condition 11(g), which limits NO_x emissions to 0.075 lb/MMBtu, averaged over a calendar quarter. *See* online docket #I.38: *McNeil Generating Station Title V Permit*, at 15. Condition F(c) of the permit, however, states that Condition 11(g) is enforceable only by state authorities and is not federally enforceable, whereas all other limits in the permit are federally enforceable. *See* online docket #I.38: *McNeil Generating Station Title V Permit*, at 8-9. As stated in our AAQIR for the Project, we do not believe that this limit is the result of a BACT analysis or that it constitutes a BACT determination. *See* AAQIR at 15-16. We also note that, as shown in Table 7.1-1 of our AAQIR, the McNeil NO_x emissions limit of 0.075 lb/MMBtu, is averaged over a calendar quarter, whereas the limit we have proposed for the Project is 0.15 lb/MMBtu, averaged over 3 hours, a much shorter, and therefore more stringent time period. We note further that Condition 11(a) in the McNeil permit imposes a limit of 0.23 lb/MMBtu (no averaging period specified) for NO_x, which is higher than our short-term BACT determination for SPI of 0.15 lb/MMBtu (3-hour average). Thus, our BACT determination for NO_x for SPI is as stringent, if not more stringent, than the McNeil emissions limit for NO_x issued by the State of Vermont. The commenter has not made any demonstration as to why any further analysis needs to be performed or to what end.

26. **Comment:** The commenter states that the PSD increment trigger date for PM_{2.5} should have been when the original permit was issued

Response: EPA disagrees. As noted in Section 8.4.3. of the AAQIR, the applicable trigger date for PM_{2.5} is October 20, 2011. 40 CFR 52.21(b)(14)(ii)(c). EPA correctly applied the appropriate trigger date and it is unclear why the commenter believes that a different PSD increment trigger date should have been used.

27. **Comment:** The commenter states that the analysis must demonstrate the nitrogen deposition on the adjacent elderberry plants.

Response: As stated in the AAQIR for the Project, EPA is required to ensure that any action authorized, funded, or carried out by EPA is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of such species' designated critical habitat. EPA concludes that the project will have no likely adverse effect on any endangered or threatened species or designated critical habitat. Discussions with the United States Fish and Wildlife Service (USFWS) support EPA's conclusion.

The commenter did not provide a legal or factual basis for his assertion that EPA must demonstrate the nitrogen deposition on the elderberry plants. In particular, page 3 of the

July 9, 1999 *Conservation Guidelines for the Valley Elderberry Longhorn Beetle* from the USFWS states that “complete avoidance (i.e., no adverse effects) may be assumed when a 100-foot (or wider) buffer is established and maintained around elderberry plants containing stems measuring 1.0 inch or greater in diameter at ground level.” See online docket #II.03: *USFWS Conservation Guidelines of Elderberry Longhorn Beetle*. As stated in our AAQIR, SPI has confirmed that construction activities will not occur within 100 feet of the elderberry shrubs that are in the Pacific Gas and Electric power line right of way and that the nearest construction activity to the existing elderberry plants will be the erection of the electrical power poles at the existing electrical sub-station which are 137 feet away from the nearest elderberry shrub. See AAQIR at 45.

Comments Submitted by Ms. Gretel Smith of Helping Hand Tools

- 28. Comment:** The commenter requests an extension of the public comment period for the reasons stated in comment #11.

Response: Please see response to comment #11.

- 29. Comment:** The commenter states that the AAQIR fails to show any analysis to support its conclusion that no Environmental Justice issues exist. The AAQIR should contain a complete Environmental Justice evaluation to support the conclusion stated.

Response: Please see response to comment #9.

- 30. Comment:** The commenter states that measurements of background ambient air quality from an air quality monitoring station 55.5 miles from the proposed site should not be used because measurements at or near the actual site must be used to obtain accurate data that represents the actual air quality at the proposed site.

Response: Please see response to comment #20.

- 31. Comment:** The commenter states that the permit fails to calculate the cumulative effect of secondary emissions. The cogeneration plant will receive its fuel from onsite and from offsite facilities via truck. The AQIA fails to analyze the cumulative impact on GHG and other emissions the trucks contribute to the overall emissions of the plant. The secondary environmental impact from transportation of the bio fuel and the removal of waste from the facility should be analyzed. Further, the AQIA does not analyze the cumulative impact of the secondary emissions from the kilns. The AQIA should analyze secondary emissions, BACT on the secondary emissions should be imposed, and the permit should include an emissions limit on the secondary emissions.

Response: The permit modification required BACT on all applicable emission units in the Project. In particular, truck emissions were not considered in a discussion of secondary emissions because secondary emissions do not include any emissions which come directly from a mobile source, such as emissions from the tailpipe of a motor vehicle, from a train, or from a vessel. 40 CFR 52.21(b)(18). As discussed in the response to comment #19,

emissions from the kilns were not projected to increase and were not subject to a BACT analysis.

- 32. Comment:** The comment claims that the permit should require the technology that achieves the lowest possible emissions rate, including EMx or DLN burners.

Response: Our BACT analysis included evaluations of both EMx and DLN burner systems. AAQIR at 13. EPA concluded that the EMx was technologically infeasible for a biomass boiler. DLN burners, while technologically feasible, would not result in lower emissions of NO_x than what was proposed. The commenter provides no legal basis for its statement that the permit should require the technology that achieves the “lowest possible emissions rate.” As stated in section 169(3) of the Clean Air Act, BACT means an emission limitation based on the maximum reduction of each pollutant subject to regulation under the Clean Air Act while taking into account energy, environmental, and economic impacts. 42 U.S.C. §7479(3).

- 33. Comment:** The BACT analysis fails to establish the type of ammonia the SNCR or SCR will use. This is important because the transportation and storage of certain types of ammonia poses a public health risk. Additionally, ammonia slips vary from the types of ammonia utilized by the plant.

Response: Ammonia is not a pollutant subject to regulation under the PSD program. *See* 40 CFR 52.21(b)(50). Therefore, our BACT analysis did not include a detailed review of possible ammonia emission reductions. As part of Step 4 of our NO_x BACT analysis, however, our AAQIR identified various types of ammonia that could be used as a reagent in the SNCR system, and explained that compared to anhydrous ammonia, aqueous ammonia and urea require more fuel to evaporate the additional water in those types of reagents. AAQIR at 16. Our analysis also noted that all types of ammonia reagents require energy to inject the reagent into the exhaust and that the exhaust will contain some small quantity of ammonia regardless of what type of reagent is used. Thus, our review of environmental and economic impacts in our BACT analysis for NO_x did not result in a clear indication that one type of reagent should be specified. EPA notes that in addition to the NO_x emissions limitation required by the PSD permit, the source is subject to District Rule 3-26 which limits ammonia emissions to 20 ppm.

SPI's 2010 Application states that SPI intends to use anhydrous ammonia. *See* online docket #I.01: *SPI-Anderson PSD Permit Modification Application_25MAR10* at 3. Although EPA did not evaluate the relative effectiveness of various ammonia reagents in our BACT analysis, SPI observed in discussions with EPA that anhydrous ammonia is more effective at its other biomass and sawmill facilities at reducing NO_x emissions and maintaining compliance with ammonia slip requirements compared to other types of reagent ammonia, such as urea and aqueous ammonia. The applicant also noted that it does not store more than 10,000 lbs of anhydrous ammonia on any of its other sites at one time. *See* online docket #V.03: *Ammonia Discussion with SPI_13NOV12*.

In response to the commenter's concern for public safety related to the storage of certain types of ammonia, we note that the Shasta County Department of Resource Management considered risks associated with the storage of ammonia and ultimately recommended the approval of Use Permit 07-021 for the Project. *See* online docket #V.04: *Report to Shasta County Planning Commission_14JUN12* at 1. The County's report states that SPI would be required to update its existing Hazardous Materials Business Plan/Spill Prevention Control and Countermeasure Plan and an Emergency Response Plan. "These plans shall provide for specific Best Management Practices to be employed during construction and operation ... policies and procedures to be implemented in the storage and handling of hazards and hazardous materials and emergencies, and dissemination of information included in the plans to contractors and employees. Implementation of the plans would reduce potential impacts related to hazards and hazardous material and in the event of an emergency to a less-than-significant level." *See* online docket #V.04: *Report to Shasta County Planning Commission_14JUN12* at 5.

The transportation of anhydrous ammonia is regulated under the Federal Motor Carrier Safety Administration (FMCSA) of the U.S. Department of Transportation (DOT). However, in response to the commenter's concern regarding the transportation of anhydrous ammonia, EPA has also considered the risk of an accident resulting from the truck shipments resulting from the Project. The Project is estimated to require 183,960 pounds per year of ammonia. *See* online docket #I.01: *SPI-Anderson PSD Permit Modification Application_25MAR10* at TableA-1 of Appendix A at 41. As noted above, the applicant stated that it does not store more than 10,000 lbs of ammonia, the threshold quantity of ammonia according to 40 CFR 68.130, on site at any one time. Assuming one truck can replenish 10,000 lbs of ammonia, the Project will require approximately 19 shipments of ammonia per year. With several suppliers of anhydrous ammonia within 200 miles of the SPI- Anderson location, EPA estimates that this would result in 8,000 miles of truck miles travelled, including roundtrips. However, tank shipments carrying ammonia would be in only one direction, therefore 4,000 miles of ammonia transport for the Project would result each year. In a report sponsored by the FMCSA, the average hazardous material accident rate was 0.32 estimated per million miles travelled. *See* online docket #V.05: *FMCSA Risks of Hazardous Material Truck Shipment_March 2001* at ES-4. Therefore, 4,000 miles of ammonia transport per year would result in an estimated single truck accident for the Project in 800 years. However, only 28% of all accidents in the FMCSA study were characterized as spill accidents. *See* online docket #V.05: *FMCSA Risks of Hazardous Material Truck Shipment_March 2001* at 10-2 This further reduces the estimated accident frequency related to the ammonia transport from the Project to 1 spill in 3,000 years from a truck carrying 10,000 lbs or less of ammonia to the Project site.

A report prepared by EC/R for another EPA action, states that a national database operated by the National Toxic Substance Incidents Program of the U.S. Agency for Toxic Substances and Disease Registry reports that between 2005 – 2010, there were 45 incidents involving anhydrous ammonia; that all incidents were associated with agricultural use of the chemical; and that the vast majority of those incidents were associated with loading operations or soil applications, rather than transport on highways or public areas. There were no incidents involving anhydrous ammonia use at a power plant or transportation to a

power plant between 2005 and 2010. *See* online docket #V.06: *ECR Mobile Source Risk Estimate Report_30JUL12* at 12.

- 34. Comment:** Step 4 of the BACT analysis comparing SCR and SNCR fails to analyze comparative costs of facilities. The analysis should include a comparative cost to other facilities.

Response: The commenter provided no legal or technical basis for consideration of comparative costs to other facilities. We received a similar comment from another commenter that suggested that we should analyze comparative costs. Our response to that comment is at #44, below.

- 35. Comment:** The temporary deferment of requiring BACT on Greenhouse gas emissions (GHG) for biofuels does not apply to plants that use natural gas. (76 FR No. 139, July 20, 2011; 40 CFR 52.21 (b)(49)(ii)(a); 40 CFR 41.166(b)(48)(ii)(a). The EPA does not state what percentage of natural gas will contribute to the GHG emissions of the plant.

Response: The deferral for CO₂ emissions from bioenergy and biogenic sources under the PSD program was applied to those CO₂ emissions that result from the combustion of biomass. *Condition X.G.2.* of the final permit limits natural gas usage to 10% of the annual heat input to U1. We included CO₂ emissions from natural gas in our analysis of whether the Project was subject to BACT for GHG. *See* AAQIR at 49-50. However, the GHG emissions from natural gas, as measured in CO₂e, were below the subject to regulation threshold and the Project was not subject to BACT for GHG. *See* AAQIR at 9.

- 36. Comment:** EPA should consider the kilns in the analysis of emissions and operations process of this plant. There should be an analysis of the effects of not using a cooling tower.

Response: Please see the response to comment #15.

- 37. Comment:** The BACT analysis does not analyze the use of a solar component to offset some or all of the emissions resulting from the use of natural gas.

Response: Please see the response to comment #13.

- 38. Comment:** The commenter states that the AAQIR does not fully analyze the nitrogen deposition impact of the surrounding area. The commenter states that the AAQIR should analyze the nitrogen deposition impacts and the effect the emissions impacts may have on the surrounding flora and fauna including the elderberry shrubs in the immediate vicinity of the plant.

Response: Please see the response to comment #27.

Comments Submitted by Mr. Kevin Bundy of the Center for Biological Diversity (CBD)

Technical Feasibility of Fluidized-bed Boiler Designs

- 39. Comment:** The commenter disagrees with EPA's statement in the AAQIR that SPI has not entered a binding power purchase agreement (PPA) with consistent base load electricity demand. The commenter states that although final state regulatory approval is still pending, SPI has entered into a power purchase agreement with Pacific Gas & Electric Company (PG&E).

Response: The commenter's submittal includes an "Attachment A," which is an "Advice Letter," dated September 7, 2012, and submitted by PG&E to the California Public Utilities Commission (CPUC). PG&E's Advice Letter describes a purchase power agreement (PPA) between PG&E and SPI and identifies a PPA as Appendix F. (The commenter did not submit Appendix F to the Advice Letter, apparently because the PPA itself is confidential). Based on the Advice Letter, EPA acknowledges that a PPA between PG&E and SPI does in fact appear to exist. We appreciate the commenter's bringing this information to our attention. We note that the public comment period for this permit began on September 12, 2012, just three business days after the date of the Advice Letter. We also note that the Advice Letter indicates that the PPA is not yet final because it appears to be currently pending before the California Public Utilities Commission (CPUC) and PG&E has requested the CPUC's approval of the PPA by March 2013. Finally, we note that the Advice Letter is signed by PG&E, not SPI; therefore, it is problematic to ascribe significance to it without qualification.

- 40. Comment:** The commenter states that to the extent there is a feasibility problem, it results from contractual terms that SPI negotiated, as opposed to technical limitations. The commenter argues that the Advice Letter states that PG&E's obligation to purchase power from SPI is limited to the amounts specified under current contracts, which will expire in 2016 and 2017. The commenter continues that SPI intends to commence operation of the new boiler in 2014 and ramp up to full power production in 2017. The commenter concludes that the operational flexibility SPI seeks will be necessary for only three years and only because of contractual terms that SPI negotiated. The commenter states that even if SPI has negotiated a PPA that restricts it from selling the facility's full output for the first three years of operation, that business decision does not make fluidized-bed boiler alternatives technologically infeasible under Step 2 of the BACT analysis and that this business decision should not be the basis of a permit that would allow SPI to install and operate equipment that will emit higher rates of pollutants for decades after 2017.

Response: SPI submitted to EPA a letter dated January 23, 2012 explaining its need for a stoker boiler, as opposed to a fluidized bed boiler. In short, SPI's letter states that the new boiler will be used for two purposes: (i) to produce steam to operate lumber-drying kilns for SPI's saw mill operation; and (ii) to produce steam to power a turbine and electrical generator that will produce electricity for sale to the power grid. SPI's letter states that the new boiler must be able to operate at loads between 20 percent and 100 percent because the boiler must continue to provide steam for its saw mill operation even if demand for grid power was not present and the steam turbine and generator are taken offline. SPI's letter explains that it anticipates that there may be low demand for grid power in the near term, which will require it to operate the new boiler at low loads because PG&E, the purchaser of

the power to be generated by the new boiler / turbine / generator, has projected that “between 2014 and 2017, and perhaps beyond,” it will have more renewable energy available to it than it will need to meet California renewable energy standard requirements.

SPI’s January 2012 letter also refers to operations at its facility in Lincoln, California, which includes a stoker boiler, lumber-drying kilns, and a steam turbine and generator. SPI’s letter explains that the Lincoln facility’s stoker boiler has been capable of operating at low load and maintaining operation of the lumber drying kilns when the steam turbine and generator were offline for unscheduled repairs. SPI’s letter thus describes another scenario in which a boiler capable of operating at low load is able to accomplish its business purposes.

In addition, SPI’s January 2012 letter states that a boiler that cannot operate at lower loads would have to be shut down, which would result in shutdown of the saw mill’s lumber-drying kilns and possibly a complete shutdown of the mill. According to SPI’s letter, which included a supporting reference to a fluidized bed boiler manufacturer, fluidized bed boilers are unable to operate at lower load rates (i.e., a turndown mode). SPI stated that a fluidized bed boiler was therefore incompatible with its planned use of the new boiler to produce process steam as well as steam to generate electricity for sale to the power grid.

Based on SPI’s January 2012 letter, as well as SPI’s other submittals, SPI’s business purpose in constructing the new boiler is two-fold: to process steam for its mill operations and to provide a renewable energy source of grid power. To meet these dual purposes, SPI requires a boiler type that can operate under varying loads: at low load when steam is required only for mill operations; and at high load when steam is required for both mill operations and grid power. SPI has provided technical support for a determination that a fluidized bed boiler is not capable of meeting both purposes, and the commenter did not provide technical evidence to the contrary. Moreover, it is of little relevance that SPI may have negotiated a contract for the sale of electricity that does not require full steam production at all times – BACT does not require that the permit applicant enter into business contracts that will maximize the use of permitted emissions units. SPI’s business purpose for selection of a stoker boiler is that it fulfills two purposes and SPI has provided a technical justification that a fluidized bed boiler cannot adequately fulfill both purposes.

- 41. Comment:** The commenter states that it is not clear that the operational flexibility SPI seeks is necessary at all. According to the commenter, deliveries in excess of PG&E’s renewable energy obligations will be bankable; therefore, it appears unlikely that PG&E would require SPI simply not to generate excess power that PG&E could easily bank in order to meet an acknowledged future compliance deficit.

Response: The comment questions SPI’s justification for operating in a turndown mode, and thus SPI’s need for a stoker boiler. We note that although the Advice Letter states that excess power would be bankable and available for future compliance periods, it does not “acknowledge” a future compliance deficit. Advice Letter at 17-18. In addition, the motivations of PG&E, which is not the permit applicant, are outside the scope of our authority to consider when reviewing a PSD permit application. Furthermore, the comment

does not address SPI's stated need for a boiler that can operate in turndown mode as a result of maintenance or repair on the steam turbine and generator.

- 42. Comment:** The commenter states that EPA must consider alternatives to the facility as proposed. For example, EPA could deny the permit outright and allow the applicant to renew the application once the need for the facility arises. Another alternative would be to prohibit operation of the new boiler and allow SPI to continue to operate the existing boiler for power and process steam until 2017 or whenever the PPA requires full base load power deliveries. These alternatives are consistent with the PPA, SPI's submittals, and EPA's statement of basis and demonstrate that fluidized-bed boiler designs should not have been rejected as technically infeasible.

Response: EPA, the permit issuer for the Project, does not have an obligation to independently investigate all possible alternatives. The Environmental Appeals Board has observed the importance of this limitation on the permit issuer's obligation, particularly where the evaluation of need for additional electrical generation capacity would require a rigorous and robust analysis and would be time-consuming and burdensome for the permit issuer. In such circumstances, the permit issuer is granted considerable latitude in exercising its discretion to determine how best to apply scarce administrative resources. EPA has evaluated the Project for all of the of the appropriate applicable PSD requirements. Moreover, we note that the comment does not address SPI's stated need for a boiler that can operate in turndown mode in the event of maintenance or repair on the steam turbine and generator.

EPA's Rejection of Catalytic Control Technologies as BACT for NO_x

- 43. Comment:** The commenter stated that EPA's BACT analysis is inconsistent because it concludes that SCR is technically feasible but rejects SCR on the lack of demonstrated effectiveness. SCR should have been ranked as the top control option at Step 3.

Response: Step 3 of our BACT analysis ranked SCR as the top control option. *See* AAQIR at 15, Table 7.1-2. The fact that there is little operational data for SCR on stoker boilers is a factor that we considered in Step 4, as part of our analysis of economic impacts. Please see our response to comment #44 below. After a thorough review, EPA determined that BACT for NO_x for the Project is 0.13 lb/MMBtu on a 12-month rolling basis and 0.15 lb/MMBtu on a 3-hour block average.

- 44. Comment:** Citing the Draft NSR Manual at B.31-B.32, the commenter states that the BACT analysis fails to consider the cost effectiveness of the proposed control relative to other similar sources that have employed that control. The commenter states that neither the Statement of Basis nor SPI's application contains comparative information about average and incremental costs of SCR at other biomass facilities that have employed SCR or RSCR as BACT. Evaluation of economic impact on the proposed facility alone is insufficient to support rejection of a proposed control measure as BACT.

Response: The portion of the Draft NSR Manual cited by the commenter recommends that an applicant document significant cost differences between control technologies “where a control technology has been *successfully applied to similar sources in a source category*. . .” Draft NSR Manual at B.31 (emphasis added). We were unable to find significant support for a finding that either SCR or RSCR has been successfully applied to biomass stoker boilers, nor did the commenter provide any such examples. As shown in our AAQIR at Table 7.1-1, our BACT analysis included information regarding a number of recent BACT determinations for stoker boilers. Table 7.1-1 shows that, although seven facilities have received permits that would require use of SCR or RSCR, five of those facilities have not been constructed; thus, those five BACT determinations do not represent an “achieved in practice” standard. Our review found only one source, Lufkin Generating Plant (Lufkin), constructed with SCR. Since completing construction in late 2011, Lufkin has operated sporadically; as a result, the facility has not generated a significant quantity of emissions data, making it difficult to verify that the NO_x emission rate of 0.075 lb/MMBtu on a 30-day rolling basis has been achieved in practice. In addition, our review found only one source constructed with RSCR, McNeil Generating Station (McNeil). The limit identified in Table 7.1-1 for this source, 0.075 lb/MMBtu, is averaged over 150 days and has been verified; however, the short-term limit for the McNeil boiler is 0.23 lb/MMBtu (no averaging period specified), which is higher than our short-term BACT determination for SPI of 0.15 lb/MMBtu (3-hour average).

In making our BACT determination for SPI, we considered the lack of operational data for SCR for similar sources as well as the \$9,000 per ton of NO_x removed incremental cost for SCR (compared to SNCR) at SPI. Our determination is consistent with the Draft NSR Manual, which recommends documentation of significant cost differences between control technologies when the permitting authority is eliminating a control technology that has been successfully applied to similar sources. In this case, we were unable to find that SCR has been successfully applied to similar sources, and in the limited instance of RSCR at McNeil, we found that our BACT determination for SPI was at least as stringent, if not more stringent, than the limit for McNeil.

45. **Comment:** The commenter states that EPA did not clearly explain why it selected SPI’s proposed NO_x emission limits as BACT. Other facilities with SNCR have been permitted at lower emission rates and “demonstrated in practice” should not be the controlling factor. The commenter also argued that if EPA is adopting an emission limit with a margin of safety, then EPA must explain its choice and support it in the record.

Response: Our AAQIR did not reference “compliance margin” as a basis for our BACT determination; the commenter is apparently assuming that we were relying on this concept as a basis for our NO_x BACT determination. Our AAQIR, however, explained that the basis for our determination is that the limit is the most stringent NO_x emissions limit for stoker boilers with SNCR demonstrated in practice and that the incremental costs of SCR above the costs of SNCR made SCR cost prohibitive. *See* AAQIR at 15-16.

Our NO_x BACT determination was based in part on the information provided in Table 7.1-1 of the AAQIR, which lists recent NO_x BACT determinations for biomass stoker boilers.

Two determinations include the use of SNCR and lower NO_x emissions limits than the limit proposed for SPI; however, neither facility has been constructed, and, therefore, those limits have not been demonstrated in practice. In addition, we note that Table 7.1-1 of the AAQIR shows that the lower NO_x limits using SNCR are subject to longer averaging periods (0.1 lb/MMBtu (30-day rolling average) and 0.12 lb/MMBtu (24-hour block)) than the short term limit we have proposed for SPI (0.15 lb/MMBtu (3-hour block)).

In addition, SPI presented information that although another of its facilities received a NO_x limit of 0.1 lb/MMBtu, SPI was unable to achieve this lower limit without using excessive amounts of ammonia. Specifically, SPI's 2010 application states that SPI received a permit in 2006 for a 450 MMBtu/hr boiler at its facility near Burlington, Washington with NO_x limits of 0.13 lb/MMBtu (24-hour average) and 0.1 lb/MMBtu (12-month rolling average). SPI stated that the 0.1 lb/MMBtu (12 month rolling average) limit was removed from the permit because excessive ammonia use in the SNCR system resulted in a secondary plume. *See online Docket #1.01: SPI-Anderson PSD Permit Modification Application 25 MAR10, App. B at 7, n.3.* We also note that SPI's Anderson facility is subject to District Rule 3-26, which limits ammonia slip emissions which can result from excessive ammonia use.

EPA's BACT determination for CO

- 46. Comment:** The commenter states that the BACT analysis for CO contains the same flaws as the BACT analysis for NO_x. According to the commenter, these flaws are the rejection of fluidized-bed boiler design alternatives as technically infeasible and the failure to compare average and incremental cost of catalytic CO controls with equivalent costs at other comparable facilities.

Response: Because the commenter is not raising new concerns with respect to our BACT analysis for CO separate and apart from the issues the commenter raised regarding our BACT analysis for NO_x, our response to this comment is largely by reference to the responses regarding the NO_x BACT comments. In addition, we have a few other points to make that are specific to our CO BACT analysis.

With regard to the BACT determination for CO and the corresponding installation of add-on control technology alternatives to the stoker boiler, EPA believes its BACT determination was appropriate. Of those facilities identified in the BACT analysis with lower permitted CO emissions limitations, three other permitted sources in Table 7.1-3 have lower CO emissions limitations through the implementation of an oxidation catalyst and three employ good combustion. None of the six facilities identified has constructed. The AAQIR for the Project describes an oxidation catalyst as a technically feasible control alternative and provides context that verifiable data with biomass stoker boilers implementing an oxidation catalyst remains limited. In its review of add-on control alternatives, EPA not only considered the cost of an oxidation catalyst, but also what has been achieved in practice with stoker biomass boilers. EPA also reviewed a number of facilities and permit determinations that were not provided by the applicant in its BACT analysis materials.

Some proposed facilities have lower permitted emission limits for CO through the implementation of good combustion and others have higher permitted emission limits. However, as noted in SPI's application, "emissions resulting from incomplete combustion (CO and VOC) are balanced with emissions related to high furnace temperatures (NO_x) to achieve optimally low emissions of all pollutants. However, in order to achieve the proposed NO_x emission limit (0.13 lb/MMBtu) while not exceeding 20 parts per million (ppm) ammonia slip, as required by Shasta County (Shasta County AQMD Rule 3:26.c.4), boiler operation will favor reduced NO_x creation over reduced CO creation." See online docket I.01: *SPI-Anderson PSD Permit Modification Application 25MAR10*, App.B at 16. As a result of all these considerations, EPA determined that BACT for CO for the Project is 0.23 lb/MMBtu (3 hour block average) and 108 lb/hour (3-hour block average).

EPA's BACT determination for PM, PM₁₀ and PM_{2.5}

- 47. Comment:** The commenter states that the BACT analysis improperly concludes the emission limitations for particulate matter. Lower emission limits have been permitted at other facilities, both with the ESP and multiclone technology proposed by SPI and with the baghouse technology which was not selected. EPA does not explain why it chose only a "demonstrated in practice" emissions limit rather than the most effective technically feasible control.

Response: As detailed in the BACT analysis for PM in the AAQIR, EPA identified three biomass stoker boilers with lower permitted emissions limits for PM, none of which has constructed. See AAQIR at 19-22, and Table 7.1-5. One of those projects appears to have been canceled, and as noted in our AAQIR, was permitted for filterable particulate only, whereas the SPI limit is for total PM. Beaver Wood Power Biomass Technical Support Document, February 10, 2012, p. 22. The other two proposed facilities listed in Table 7.1-5 have slightly lower emission rates of PM, utilizing different add-on control technologies: Warren County Biomass is permitted with an emission limit of 0.018 lb/MMBtu employing a baghouse, and Beaver Wood Energy is permitted with an emission limit 0.019 lb/MMBtu employing an ESP. Our BACT determination for SPI- Anderson is 0.02 lb/MMBtu.

Our AAQIR for the Project describes both a baghouse and ESP as technically feasible control alternatives. At Steps 1 and 4, we noted that baghouses may present a fire concern and generally require more energy than ESPs. Moreover, our AAQIR explains that SPI estimated the same level of control from both add-on control alternatives at 0.02 lb/MMBtu for PM. See AAQIR at 21 and online docket #I.01: *SPI-Anderson PSD Permit Modification Application 25 MAR10*, App. B at 21. We also reviewed a number of facilities and permit determinations that were not provided by the applicant in its BACT analysis materials and what has been achieved in practice. In our review of add-on control alternatives, we considered not only energy and environmental impacts associated with the add-on control alternatives, but also what controls have been achieved in practice with biomass stoker boilers. As a result, EPA has determined that BACT for total particulate matter for the Project is 0.02 lb/MMBtu.

EPA's BACT determination for Emergency Engine Emissions

48. **Comment:** EPA improperly rejected the most stringent emissions control option of NSPS-compliant non-emergency engine for use as an emergency engine without identifying average or incremental cost of controls, providing comparative cost information from other facilities, or reviewing other BACT determinations. EPA's statement that "economic impacts and limited environmental benefit" would not justify use of a more stringent control technology is inadequate.

Response: We received comments from SPI during the public comment period clarifying its intention to install a spark ignition natural gas fired engine rather than a compression ignition engine as stated in the AAQIR. This revision does not affect the lb/hour emissions limits of 0.78 lb/hr NO_x, 6.11 lb/hr of CO, and 0.0216 lb/hr of PM/PM₁₀. In addition, the emergency engine will also be required to comply with the NSPS emergency engine emissions limits provided in 40 CFR 60 Subpart JJJJ, which applies to spark-ignition engines. As stated in the AAQIR, operation of the emergency engine will be restricted to no more than 100 hours per year

We have revised the Emergency Engine BACT Analysis for a spark ignition emergency engine rather than a compression ignition emergency engine. As for the original BACT analysis for the compression ignition engine, we note that the proposed emissions and operational limits will result in extremely low mass emissions on an annual basis. Moreover, we also note that the commenter did not supply additional information that more stringent limits could be consistently achieved in practice for the 191kW engine.

We have concluded that an NSPS-compliant spark ignition emergency engine that is subject to the proposed hourly emission limits and an operational restriction of 100 hours per year represents an adequate balance of the impacts associated with the Project's emergency recirculating pump requirements. In the final permit the spark ignition emergency engine will result in low emissions of approximately 226 lbs/year of CO, 78 lbs/year of NO_x and 3 lbs/year of PM. As such, the spark ignition natural gas emergency engine for the Project is appropriate and meets BACT. For further information, please see our revised Emergency Engine BACT Analysis in the Appendix to this document.

EPA's BACT determination for Cooling Tower Emissions

49. **Comment:** The commenter stated that the BACT analysis does not properly evaluate particulate control for cooling towers. According to the commenter, EPA relies solely on a conclusory and internally contradictory statement to make its final determination and the AAQIR does not identify anything that provides authority for what amounts to an ad hoc *de minimis* exemption from rigorous application of BACT requirements.

Response: We disagree with the commenter that our analysis of cooling tower controls was conclusory or *de minimis*. As set forth in the AAQIR, we conducted a top-down BACT analysis that considered three types of cooling towers technologies: dry cooling, wet-dry hybrid, and wet cooling with 0.0005% drift eliminators. EPA did not find any saw mill facilities or biomass boilers that use dry cooling or wet-dry hybrid cooling as an

alternative to wet cooling. We note that the commenter did not provide any examples of dry or wet-dry cooling tower applications for saw mills or biomass boilers (or any examples at all). Of wet cooling tower options, the applicant's proposal to use DRU-1.5 high-efficiency mist eliminators represents the lowest proposed amount of drift that EPA found in its review of similar facilities. As we noted in the AAQIR, the difference between the various cooling tower control options is approximately 1.10 tons of total PM per year.

In response to the commenter's reference to an internal contradiction in our statement that a reduction in overall efficiency would result from the use of a dry or hybrid wet-dry systems, we acknowledge that we inadvertently included a mis-statement. We should have stated that this efficiency reduction would result from the additional energy requirements for *dry* (not *wet*, as stated in the AAQIR) and hybrid systems. Although we believe that our intent could be discerned from the overall context of our analysis, we appreciate the commenter bringing this mis-statement to our attention.

Without any supporting information available to us, either from our own review or from the commenter, it is difficult to consider an additional sufficient basis on which to establish BACT limits that could be consistently achieved in practice by the Project for the cooling tower. We find that the applicant's proposed control of wet cooling with high efficiency mist eliminators adequately balances the collateral impacts associated with the Project's cooling requirements and has resulted in low potential emissions from the cooling system – 1.1 tons per year of PM/PM₁₀/PM_{2.5}. As such, the proposed cooling system for the Project is appropriate, consistent with other PSD permits for similar sources as stated in SPI's 2010 application. *See* online docket #1.01, *SPI-Anderson PSD Permit Modification Application 25 MAR10*, App. B at 29 and meets BACT.

EPA's Air Quality Analysis

- 50. Comment:** The commenter argues that EPA's air quality analysis was deficient because it did not adequately explain why it assumes startup/shutdown NO_x emission rates (when the SNCR system will not be working) are the same as normal operational emission rates. The analysis should explain why NO_x emissions with and without SNCR would be the same. The commenter also stated that there is a discrepancy between the descriptions of the startup process in the AAQIR and a letter submitted by SPI to EPA dated May 30, 2012.

Response: EPA requested that SPI provide a modeling analysis that reflects worst-case conditions during startup. *See* online docket #I.33: *SPI- Anderson to EPA email re SUSL emissions clarification 27JUN12* and # I.11: *SPI- Anderson_updated_modeling_and_SUSD_analysis-final_30MAY12* at Table 5. To the extent that the commenter is questioning why "NO_x emissions with and without the SNCR system would be exactly the same," we emphasize the distinction between, on the one hand, a worst case assumption that NO_x emissions during startup are equivalent to NO_x emissions during normal operations and, on the other hand, a conclusion that such emissions are equivalent. Equivalency between the two scenarios, startup and normal operations, is an assumption being made for modeling purposes in order to capture worst case conditions. To the extent the commenter is questioning the validity of this assumption,

we believe the assumption is valid because startup includes firing natural gas, which results in lower NO_x emissions than biomass. In addition, startup involves lower flow rates and reduced exhaust temperatures. Therefore, as a general matter, it is reasonable to assume that emissions during the firing of natural gas will be less than emissions during firing of biomass.

In addition, the applicant supplied comments during the public comment period regarding emissions during periods of startup and shutdown. In its comments, the applicant reiterated that the appropriate mass emission limits were included in the AAQIR and permit; however, the applicant requested that the averaging period for emissions limits for NO_x and CO during startup and shutdown be increased from an hourly average to an 8-hour average. See response to comment #70 in this document. EPA has granted this request and revised the permitted averaging times for NO_x and CO emissions during periods of startup and shutdown.

We also note that the modeling that used this assumption showed that emissions for annual and 1-hour NO₂ and 24-hour PM_{2.5} would exceed SILs; therefore a cumulative impacts analysis was required and conducted. In other words, because SPI had to do the cumulative impacts modeling anyway, the assumption that NO_x during startup was equivalent to NO_x during normal operations did not result in less analysis.

- 51. Comment:** The air quality analysis does not quantify secondary PM_{2.5} formation despite high emissions of NO_x, a PM_{2.5} precursor, and does not support its assertion that emissions of secondary PM_{2.5} will be less than direct, primary emissions.

Response: We maintain that our discussion of secondary impacts in Section 8.4.3.2 of the AAQIR is sufficient for characterizing the potential impacts on secondary PM_{2.5} resulting from 270 tpy of NO_x. In addition, most of these chemical transformations in the atmosphere occur slowly (over hours or even days, depending on atmospheric conditions and other variables), causing secondary PM_{2.5} impacts to occur generally at some distance from the source of its gaseous emissions precursors, and are unlikely to overlap with nearby maximum primary PM_{2.5} impacts in space or time.

EPA's Additional Impacts Analysis

- 52. Comment:** EPA's additional impact analysis is inadequate because EPA cannot rely on the fact that air modeling shows no violation of the secondary NAAQS as a proxy for analysis of depositional effects on soil and vegetation.

Response: While the commenter noted concerns about characterizing depositional effects based on a comparison to the secondary NAAQS, our determination that the Project would not generally result in adverse impacts to soils or vegetation was based on several considerations as noted in the AAQIR, including air quality related values (AQRVs), soils survey, biological review, and screening procedures guidance. In addition, the AAQIR also outlines our approach for comparing the Project's modeled impacts to EPA's screening concentrations. See AAQIR at 41-42. Based on our consideration of the various sources of information, we determined that emissions associated with the project will not result in

adverse impacts to soils or vegetation. The following further clarifies our consideration of the AQRVs, soils survey information, and biological review.

SPI's 2007 PSD application included a summary of the results associated with the AQRVs; this summary used CALPUFF to evaluate impacts to AQRVs in Class I areas. Class I Area deposition fluxes for nitrogen and sulfur deposition were calculated from CALPUFF results. Although there are no specific standards for incremental impacts to soils and vegetation, the National Park Service (NPS) has set deposition analysis thresholds (DATs) of 0.005 kg/ha/yr for nitrogen deposition and for sulfur deposition. *See online docket #V.01: Guidance on Nitrogen and Sulfur Deposition Analysis Thresholds* at 4. A DAT is the additional amount of nitrogen or sulfur deposition within a Class I area below which estimated impacts from a project are considered insignificant. Nine Class I areas were evaluated, ranging from distances of 57 km to 192 km; the maximum nitrogen and sulfur deposition flux results were 0.0007 and 0.0002, respectively, and therefore not greater than the DATs of 0.005. As a result, the predicted nitrogen and sulfur deposition fluxes containing primary and secondary aerosols attributable to the Project are not expected to significantly impact soils and vegetation within Class I areas.

The DATs, also referenced as concern thresholds, are intended to serve as a quantitative, conservative screening criteria for Federal Land Managers (FLMs) to identify whether there are potential deposition fluxes requiring further consideration on a case-by-case basis. Since the year 2000, the FLMs have provided guidance regarding the AQRVs, which includes discussions regarding deposition. As stated in the most recent FLMs' guidance on nitrogen and sulfur deposition analyses, the information and procedures are generally applicable to both Class I and Class II areas for evaluating the effect of nitrogen or sulfur increases. *See online docket #V02: FLM Interagency Guidance for Nitrogen and Sulfur Deposition Analyses_November 2011* at 2.

In subsequent updates and clarifications to SPI's 2010 PSD application, the applicant provided further characterization for soil and vegetation impacts, including soils survey information and a biological review. *See online docket #I.03: SPI-Anderson_response_to_EPA_incomplete_letter-final_01JUL10*, #II.01: *SPI-Anderson to EPA re Biological Assessment 01APR10* and #II.02: *Biol Rpt for EPA review_Complete pkg-R 15APR10*. As part of its biological review, SPI did not identify any refuges or preserves containing sensitive soils or vegetation that could potentially be impacted by the proposed project. Section 9.2 of the AAQIR evaluates potential visibility impacts on two Class II areas, the Sacramento River National Wildlife Refuge (38.8 km) and Whiskeytown National Recreation Area (18.3 km). *See AAQIR* at 43-44. SPI's DAT analysis concluded that the Project would result in relatively low deposition fluxes on nearby Class I areas, which we considered as an indicator that adverse impacts on nearby soils or vegetation in these two Class II areas would be unlikely.

With regards to the nearby soils, we considered the soils survey review SPI conducted using the Web Soil Survey (WSS). *See AAQIR* at 41. The WSS is a web-based tool that provides soil maps, data and information produced by the National Cooperative Soil Survey operated by the USDA Natural Resources Conservation Services (NRCS) Based on the applicant's review, we considered the Project's potential nitrogen and sulfur deposition

unlikely to further influence the pH of soils (5.3 to 6.5) in the area. Based on discussions with and/or review of information from the USFWS, BLM, and NRCS, we considered this information in determining that the Project's impact would not result in adverse impacts to soils or vegetation.

Finally, we note that the commenter did not suggest any specific additional analysis that we could have or should have conducted. Moreover, we note that, as presented in Table 9.1-2 of the AAQIR, the maximum modeled concentrations of NO_x and SO_x are several orders of magnitude below EPA's secondary NAAQS standards. For all the reasons stated above, we believe our determination that the Project will not generally result in adverse impacts to soils or vegetation was appropriate.

Other Applicable Legal Requirements

- 53. Comment:** The Clean Air Act and EPA's implementing regulations clearly require that SPI demonstrate compliance with other applicable standards, including SIP provisions, NSPS and NESHAP, in conjunction with its PSD application. *See* 42 U.S.C. §7475(c)(3); 40 C.F.R. §52.21(j)(1), but SPI's application and EPA's statement of basis do not discuss compliance with these provisions.

Response: EPA has determined that the emissions limits in the proposed permit are more stringent than, and therefore will assure compliance with, applicable SIP and NSPS requirements. We note that Shasta County has maintained its designations as attainment for all criteria pollutants for many years; therefore, consistent with the Act, Shasta County's SIP does not contain the more stringent emission standards that are typically found in SIPs applicable to nonattainment areas. We have also determined that the Project is subject to the standards of performance of NSPS Subpart Db, and that the proposed permit will assure compliance with those obligations. NSPS Subpart Db states that an affected facility that commences construction after February 28, 2005, and that combusts over 30 percent wood (by heat input) on an annual basis and has a maximum heat input capacity greater than 250 MMBtu/hr shall not cause to be discharged into the atmosphere from that affected facility any gases that contain PM in excess of 0.030 lb/MMBtu heat input. 40 CFR Part 60.43b(h)(1). The PM emissions limit for the boiler in the Project is 0.02 MMBtu/hr. These requirements were discussed in SPI's 2007 and 2010 applications.

On December 20, 2012, the EPA Administrator signed the final National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters (Boiler MACT) which will be effective 60 days from the date of publication in the Federal Register. The emission limits for CO and PM in the Boiler MACT for a new biomass stoker boiler are 390 ppm (~0.345 lb/MMBtu) with CEMS and 0.030 lb/MMBtu respectively. The BACT limits for the Project at 0.23 lb/MMBtu for CO and 0.02 lb/MMBtu for PM are more stringent than those in the Boiler MACT. The Project will also be subject to other requirements from the Boiler MACT, such as other non criteria pollutant emission limits, monitoring, recordkeeping and reporting requirements.

- 54. Comment:** EPA has not adequately explained why or how it is processing this permit as a major modification. The statement of basis contains no discussion of any contemporaneous emissions changes resulting from the modification or baselines used to evaluate emission increases. The draft permit and statement of basis focus only on the new boiler as if it were the only emissions source at the facility, which makes it impossible to determine how EPA arrived at significance determinations.

Response: SPI's 2007 and 2010 applications state that the Project will not increase emissions from any existing units. *See* online docket #I.13: *SPI-Anderson PSD 2007 Permit Modification Application* at 7, #I.01: *SPI-Anderson PSD Permit Modification Application_25MAR10*, at 4. SPI also stated that emissions increases from fuel handling operations are not projected to increase. *See* online docket #I.05: *SPI-Anderson_response_to_2nd_EPA_incomplete_letter-final_07SEP10*. In addition, SPI and EPA evaluated the Project using an actual emissions baseline of zero for all new equipment. *See* online docket # I.01: *SPI-Anderson PSD Permit Modification Application_25MAR10* at Tables 2-1 and 2-2, #I.41: *SPI-Anderson Annual Emissions MEMO_05SEP12*. Tables 2-1 and 2-2 of SPI's 2010 Application and Table 6-1 of EPA's AAQIR summarize the estimated emissions increases from the Project and our conclusions that the Project would exceed the significance levels for CO, NO_x, PM, PM₁₀, and PM_{2.5}.

In addition, we disagree with the commenter's suggestion that the draft permit and statement of basis place an inappropriate emphasis on the new boiler. The "Project Description" section of both the draft permit and the AAQIR contain the following statement: "The site currently contains a wood-fired boiler cogeneration unit with associated air pollution control equipment and conveyance systems that produce steam to dry lumber in existing kilns." Draft Permit, at 1; AAQIR at 3. The AAQIR also includes separate tables for new and existing equipment: Table 4-1, Proposed New Equipment List, and Table 4-2, Existing Equipment List. EPA clearly described the Project as a modification of the Facility's existing configuration.

EPA's Deferral of PSD for Biogenic CO₂ and Grandfathering PM

- 55. Comment:** The commenter states that EPA's deferral of PSD requirements for biogenic CO₂ emissions is unlawful and that EPA's treatment of biogenic CO₂ emissions in the draft permit would violate the Clean Air Act if EPA's deferral is vacated. The commenter also states that 42 U.S.C. §7465(a)(2) imposes an independent obligation to consider less-polluting alternatives; therefore, EPA must evaluate alternatives that reduce dangerous carbon pollution. The commenter cites several scientific studies to support its argument that combustion of biomass fuels, including green wood and forest thinnings as well as harvest residuals and other wastes, can increase greenhouse pollution for many years.

Response: As noted by the commenter, there is pending litigation in the D.C. Circuit Court of Appeals regarding our rule, *Deferral for CO₂ Emissions from Bioenergy and Other Biogenic Sources under the Prevention of Significant Deterioration and Title V Programs*, 76 Fed. Reg. 43490 (July 20, 2011). EPA's position is that the Deferral is a proper exercise of our authority under the Clean Air Act in light of the need for further

scientific review of CO₂ emissions from biogenic sources. Consistent with our rule and the Agency's position, our PSD analysis for the Project does not include an evaluation for CO₂ emissions.

With regard to alternatives to the Project, we do not agree that our obligations under section 165(a)(2) are as broad as the commenter suggests. EPA does not have an obligation to independently investigate all possible power generation alternatives. Further, the Environmental Appeals Board has observed the importance of this limitation on the permit issuer's obligation, particularly where the evaluation of need for additional electrical generation capacity would require a rigorous and robust analysis and would be time-consuming and burdensome for the permit issuer. In such circumstances, the permit issuer is granted considerable latitude in exercising its discretion to determine how best to apply scarce administrative resources. *In re Prairie State Generating Company*, 13 E.A.D. 1, 32 (EAB 2006) at 33.

In this case, EPA does not believe that it is appropriate to conduct the type of analysis that would be required to "fully evaluate possible permit conditions that would reduce or avoid greenhouse gas pollution" from the Project. Even if EPA did have the expertise and resources to conduct such an analysis, the commenter has not provided any criteria on which such an analysis could be measured against so as to meet the commenter's demand for a "full" evaluation.

- 56. Comment:** The commenter states that the grandfathering provisions in EPA's proposed rule revising the PM NAAQS are unlawful.

Response: As stated in the public notice for the Project, EPA has requested public comment on its proposed action relating to the Project. The commenter states that the Center for Biological Diversity has submitted comments to EPA with regard to the specific issue of grandfathering PSD actions in the context of our recently proposed PM NAAQS. EPA will address those comments as part of our rulemaking action on the PM NAAQS.

Comments Submitted by Mrs. Scott and Ashley Wayman

- 57. Comment:** The commenter states that the biological resources, parks and neighborhoods, including Verde Vale Elementary school, surrounding the proposed plant would be greatly affected in adverse ways. The commenter would like a larger area started within the forthcoming Environmental Impact Report.

Response: The AAQIR supporting the proposed action describes the legal and factual basis for the proposed permit, including requirements under the PSD regulations at 40 CFR §52.21. The AAQIR examines the potential impacts to air quality and biological resources as required under the PSD program. It is unclear from the comment above what larger area needs to be considered under this action.

- 58. Comment:** The commenter has inquired as to how the new cogeneration unit will not continually violate air standards. What will the facility do about odor?

Response: The PSD permit with this action requires the facility to comply with applicable requirements under the PSD program. The permit requires BACT for NO_x, CO, PM, PM₁₀ and PM_{2.5}. The emission limits in the permit will protect the NAAQS for NO₂, CO, PM₁₀ and PM_{2.5}. Moreover, the permit contains monitoring, recordkeeping and reporting requirements to ensure that the facility complies with emission limits contained in the permit.

The PSD permit does not contain requirements directly regarding odor because odor is not a regulated NSR pollutant. Separately, odor is listed as an air contaminant in Shasta County District Rule 1:2. Moreover, District Rule 3:16 states that the Air Pollution Control Officer may place reasonable conditions upon any source that will mitigate the emissions of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or to the public, or which cause, or have the natural tendency to cause, injury or damage to business or property.

59. **Comment:** We ask that considerations be made to the cultural and historical sites within the proposed project site.

Response: The location for the modification at SPI- Anderson will be within the physical footprint of the current facility location. The facility is located at 19758 Riverside Avenue in Anderson, California 96007 (Assessor's parcel No. 050-110-025). The site is approximately 0.5 mile west of Interstate 5, and approximately 2 miles north of the city of Anderson. It is unclear what cultural or historical sites within the boundary of the current facility location need to be considered given that the Project will be located on SPI- Anderson's existing site.

Comments Submitted by Ms. Patricia Lawrence

60. **Comment:** Cumulative impacts of total air pollution in California's upper central valley have not been completely evaluated to include pollution from wildfires, increased vehicle and stationary sources of pollution, and air traffic pollution including chemtrails from jets in the federal weather modification program.

Response: The AAQIR, which describes the legal and factual basis for the permit, including requirements under the PSD regulations at 40 CFR §52.21, analyzed air quality impacts from the Project. The air quality impacts portion of the AAQIR assessed the impacts of the Project on ambient air quality. EPA concluded that the emission limits will protect the NAAQS. It is unclear from the commenter's statement why the background ambient air quality monitoring data does not include these incidents or how they will affect Project's ability to protect the NAAQS.

61. **Comment:** There is only so much clean air in the upper central valley where inversion layers are prevalent. Who gets the clean air and for what purpose? Why should a biomass plant be first over a solar panel manufacturer?

Response: As stated in the response to comment #60, the AAQIR assessed the impacts of the Project on ambient air quality and EPA concluded that the emission limits will protect the NAAQS.

Regarding the solar panel comment, please see the response to comment #13.

- 62. Comment:** There may or may not be a steady or long lasting supply of biomass from the forests and wildlands. The applicant states that wood and 'other' biomass is proposed to be burned that will include household and industrial waste such as car tires. Even best available technology will not scrub all the dioxins from waste and tire burning.

Response: The new boiler will only be allowed to burn biomass, traditional non-waste fuel and not be permitted to burn waste that is not considered a traditional fuel. See response to comment #86. In particular, *Condition X.G.1.* in the PSD permit restricts fuel to natural gas and the following:

- a. Untreated wood pallets, crates, dunnage, untreated manufacturing and construction wood debris from urban areas;
- b. All agricultural crops or residues;
- c. Wood and wood wastes identified to follow all of the following practices;
 - i. Harvested pursuant to an approved timber management plan prepared in accordance with the Z'berg-Nejedly Forest practice Act of 1973 or other locally or nationally approved plan; and
 - ii. Harvested for the purpose of forest fire fuel reduction or forest stand improvement.

The fuel restrictions in the PSD permit do not allow for the combustion of industrial waste or of car tires, and therefore the combustion characteristics from the burning industrial waste or of tires was not analyzed in the AAQIR for the Project.

- 63. Comment:** Loss of California's natural forests due to clearcutting and conversion to tree farms and previous wildfires is releasing a huge carbon sink in these forests that needs to be protected to help reduce carbon in the atmosphere. What to do with accumulated biomass is a big problem in this state. Burning is not the only option. Chipping it and putting it back on the forest floor is another.

Response: The treatment of accumulated biomass within the state of California is beyond the scope of this PSD permitting action. To the extent that the Project should be subject to a BACT analysis for GHGs, EPA concluded that the PSD program did not apply to the Project for GHGs. The AAQIR identified an increase in GHG emissions that exceeds the "subject to regulation" threshold of 75,000 tpy CO₂e and the GHG significance rate of 0 tpy, however EPA's *Deferral for CO₂ emissions from Bioenergy and Other Biogenic Sources under the Prevention of Significant Deterioration and Title V programs* (76 FR 43490 July 20, 2011) applies to the Project. Since the non-deferred GHG emissions for this project are 38,252 tpy CO₂e, as calculated in Appendix A of the AAQIR, the modification is not subject to BACT for GHG.

- 64. Comment:** The commenter requests a public hearing in order to address the issues raised in Comments #60-63 and all issues that this proposal evokes.

Response: Pursuant to 40 CFR 124.12, EPA must hold a public hearing if it, on the basis of requests, determines there is a significant degree of public interest in a draft permit. After distributing the public notice to the necessary parties in accordance with 40 CFR Part 124 and additional members of the public, EPA received comments from 15 members of the public, including the applicant, and three requests for a public hearing. None of the requests for a public hearing demonstrated that there was significant public interest in the Project; therefore EPA did not hold a public hearing. EPA reviewed and responded to all written comments from the public received during the public comment period.

Comments Submitted by Mr. Dave Brown, Environmental Affairs and Compliance Manager of Sierra Pacific Industries- Anderson Division

Sierra Pacific Industries (SPI) appreciates the opportunity to comment on the proposed PSD permit and supporting Ambient Air Quality Impact Report (AAQIR) for the SPI Anderson facility. While not specifically addressed in the PSD or AAQIR documents, it is noted that the overall facility permitting process for this project has included an Environmental Impact Report (EIR) to fulfill the requirements of the California Environmental Quality Act (CEQA) and approval of a Special Use Permit as required by Shasta County. That EIR similarly addressed Air Quality (including reference to the PSD permit and process), Climate Change, Soils, Traffic, Noise, Water Resources and other considerations. A public hearing was held for the initial scoping meeting, a second hearing at the Planning Commission for the EIR certification and Use Permit approval, and a third public hearing on appeal to the County Board of Supervisors (BOS), which upheld approval of the EIR and Use Permit. The Notice of Determination was filed following the BOS approval, which was not contested by any party within the 30-day statute of limitations period following its issuance.

The comments below are first shown relative to the AAQIR document, followed by comments specific to the proposed PSD permit (and indicated in earlier comments of the AAQIR as applicable). It is understood that the AAQIR is the technical analysis that the actual PSD relies upon. While these comments are intended to correct minor inaccuracies and inconsistencies in the draft documents, the changes we have proposed do not affect the substantive analysis and would not require significant revisions to the AAQIR or the proposed PSD permit.

AAQIR

- 65. Comment:** Boiler Design -Section 7.1.1 of the AAQIR indicates two general boiler technology designs, including stoker and fluidized bed. The stoker example (top of page 12, further defines Stoker to include "vibrating, traveling grate, etc." For purposes of clarity and relevance to the proposed boiler, the term 'step-grate' should be added to this description as the proposed boiler utilizes a mechanical step-grate for fuel distribution and neither a vibrating nor traditional traveling grate system. Similarly, the boiler should only be defined as "Stoker" without the additional definition for the grate type in other portions of the permit, including but not limited to the following:

Page 6- Table 4-1: Proposed New Equipment- need to strikeout the term "with vibrating grate" next to Stoker Boiler.

Response: EPA acknowledges the comments. Although we do not produce a revised AAQIR as part of our final permit decision, we reviewed these comments and determined that they do not require a change in our final permit decision or additional analysis of the basis for our determinations.

66. **Comment:** The NO_x mass emission limit shown "Step 5 -Select BACT" on page 16 is 60.8lb/hr (3-hour block average). This value is based on the 0.13lb/MMBtu (12- month rolling average) BACT limit. It would be more appropriate to base the mass emission limit based on the 0.15 lb/MMBtu (3-hour block average) BACT limit, in which case, the value would be 70.2 lb/hr (3-hour block average).

Response: EPA agrees that the 60.8 lb/hr mass emission limit should correspond to the 12-month rolling average and that 70.2 lb/hr mass emissions should correspond to the 3-hour block average as the applicant has appropriately noted. As the boiler for the project will have a rating of 468 MMBtu/hr, it can be readily verified that the product of 468 MMBtu/hr multiplied by 0.13 lb/MMBtu is 60.8 lb/hr, and that the product of 468 MMBtu/hr multiplied by 0.15 lb/MMBtu is 70.2 lb/hr. Therefore the mass emission limit on a 3-hour block average corresponding to the 0.15 lb/MMBtu BACT determination for NO_x should, in fact, be 70.2 lb/hr. Our proposed permit limit of 60.8 lb/hr (3-hour block average) was therefore erroneous. The final permit contains the correct limit of 70.2 lb/hr (3-hour block average).

The permit has been revised to incorporate the correct NO_x lb/hr mass emission limit for U1.

67. **Comment:** Misreference- The first sentence of the first paragraph in Section 6 (Applicability of the Prevention of Significant Deterioration Regulations) references Table 4. We believe the reference is actually to Table 6-1 and should be corrected accordingly.

Response: EPA acknowledges the comment. Although we do not produce a revised AAQIR as part of our final permit decision, we reviewed the comment and determined that it does not require a change in our final permit decision or additional analysis of the basis for our determinations.

68. **Comment:** PSD non-applicability- Table 6.1 of Section 6 (Applicability of the Prevention of Significant Deterioration Regulations) indicates that SO₂, VOCs, H₂SO₄, and Pb are each less than the significant emission rate, and, therefore, PSD does not apply. This is reiterated in Section 8.4, which says "As shown in Table 8.4-1, EPA does not expect SPI-Anderson to emit Pb, VOC, and SO₂ in significant amounts." In each of these determinations, the facility and its permit are not subject to BACT, Air Impact Analysis requirements, or conditions for each of these pollutants.

As explained above and in the EIR for this project, SO₂ emissions are not expected to exceed the PSD significant emission rate threshold, and, therefore, this pollutant is not subject to PSD regulations. As such, the SO₂ limit in Table 7.1-7 should be removed.

Response: The applicant correctly notes that BACT for SO₂ does not apply for the project, as noted in Table 6-1 of AAQIR. Therefore, EPA should not have included an emission limit for SO₂ corresponding to BACT emissions limits during startup and shutdown. EPA has removed the emissions limitation erroneously attributed to BACT for SO₂ during and startup and shutdown.

EPA does not produce a revised AAQIR as part of our final permit decision; however, we revised the final permit issued for the project in accordance with this comment.

69. **Comment:** Typographical Error- Table 6-1 and footnote 3 do not match with respect to CO₂e. We do not contest either quantity, simply that the final permit should have similar values. Similarly, the VOC emissions from Table 6-1 (34.9) do not match Table 8.4-1 (34.8).

The stack temperature associated with startup/shutdown operation shown in Table 8.3-1 should be 250 °F, not 294 °F.

Response: EPA acknowledges the comments. Although we do not produce a revised AAQIR as part of our final permit decision, we reviewed these comments and determined that they do not require a change in our final permit decision or additional analysis of the basis for our determinations.

70. **Comment:** Startup and Shutdown BACT limits- Section 7.1.3 provides a general description of startup and shutdown procedures relative to the boiler operations and otherwise excludes actual pollutant concentration operations during this period. Section 8.4.2 includes Analysis of startup and shutdown for emissions and indicates that "Startup CO emissions are expected to exceed those experienced during normal operating conditions." As such, startup and shutdown averaging periods longer than normal operations (3-hour) are warranted. The technical studies supporting the PSD permit considers 1 hour and 8 hour concentrations for modeling purposes. SPI respectfully requests that for startup and shutdown the averaging limits may remain unchanged in Table 7.1-7, but the averaging times should be changed to hourly concentrations (8-hour average) for CO and NO_x.

Response: The final permit has been revised to show that the averaging times for the NO_x and CO emission limits during startup and shutdown are based on an 8-hour average. The mass limits remain unchanged. EPA has also added *Condition X.C.2.* which states that "CO emissions at all times from U1, including startup and shutdown events as defined *Conditions X.D.3. and X.D.4.*, shall not exceed 432 lbs/hr (hourly average)." *Condition X.C.2.*, in conjunction with the other CO emission limits for U1 in the final permit, constitute EPA's BACT determination for CO from U1.

As noted in the AAQIR for the Project, SPI-Anderson expects periods of startup and shutdown to be infrequent in nature. In its March 2010 application, the applicant stated that it typically shuts down its boilers at least twice per year for maintenance. *Conditions X.D.3.and X.D.4* in the PSD permit for the Project define startup and shutdown periods for the boiler and state that the generator shall be separated from the electrical grid during these periods. By separating the generator and consequently disallowing sale of electricity to the grid during periods of startup and shutdown, SPI does not have a financial incentive to operate the boiler in states of startup or shutdown. Therefore, EPA believes that the emissions experienced during periods of startup and shutdown will occur on an infrequent basis.

Although EPA has increased the averaging period of NO_x during startup and shutdown, an updated modeling analysis for the 1-hour NO₂ NAAQS was not conducted. As noted in EPA's guidance memorandum dated March 1, 2011, EPA believes that it is inappropriate to implement the 1-hour NO₂ standard, which is expressed in a statistical form, in a manner that compliance demonstrations be based on emission scenarios that can logically be assumed to be relatively intermittent. When EPA is the reviewing authority for a permit, we will consider it acceptable to limit the emission scenarios included in the modeling compliance demonstration for the 1-hour NO₂ NAAQS to those emissions that are continuous enough or frequent enough to contribute significantly to the annual distribution of daily maximum 1-hour concentrations, rather than for startup and shutdown events that may occur on a relatively infrequent basis. *See online docket I.40: Additional Clarification 1hr NO2 Modeling-Fox_01MAR11* at 9-10 in online docket.

In addition, although EPA has increased the averaging period for CO during startup and shutdown, an updated modeling analysis for the 1-hour CO NAAQS was not necessary because this modeling analysis has already been conducted. Table 7.1-7 of the AAQIR, which contains BACT emission rates during startup and shutdown, relied on values presented in Table 5 of SPI's May 30, 2012 submission. The values presented in SPI's Table 5, however, are somewhat inaccurate. *See online docket #I.11: SPI-Anderson_updated_modeling_and_SUSD_analysis-final_30MAY12*. This flaw, however, is minor since the footnote to SPI's Table 5 clearly states that modeled impacts for the CO were estimated using a mass emission rate of 432 lbs/hr (1-hour average). As shown in Table 8.3-1 of the AAQIR, Project-only modeled impacts reflect that modeling based on values of 432 lbs/hr (1-hour average) and 108 lbs/hr (8-hour average) was conducted. For this reason, EPA has also added *Condition X.C.2.* to the final permit to limit CO emissions to 432 lb/hr (1-hour average) in addition to the startup and shutdown mass emissions limit for CO of 108 lbs/hr (8-hour average).

For further discussion, please see the response to comment #50. Permit *Condition X.D.5* has also been changed to reflect the 8-hour averaging period.

71. **Comment:** Determination of Compliance- Section 7.2, Step 5 (page 24) selects BACT for the Emergency Engine. An emergency engine is typically not subject to annual source testing to determine compliance. Rather, to avoid the impracticality of source testing, compliance may be achieved by providing performance specifications from the

manufacturer to meet or exceed the g/kW-hr (on a 3-hour max rolling average) as specified in Table 7.2-3.

Response: EPA has determined that the following is BACT for the Emergency Engine:

BACT for 191 kW Emergency Engine		
Pollutant	Limit	Averaging Time
NO _x	0.78 (lb/hr)	Hourly
CO	4.0(g/hp-hr)	3- Hour
PM, PM ₁₀ , PM _{2.5}	0.0216 (lb/hr)	Hourly

These limits are set forth in Table 6 of the final permit. *Condition X.I.4.* of the final permit requires an initial performance test as set forth in 40 CFR §60.4244, and at least every five years beginning ten years after the initial performance test. *See* the Appendix to this document for more information on the BACT determination for the emergency engine.

EPA has updated the equipment description for this emissions unit in the final permit to be a spark-ignition (SI) internal combustion, natural gas-fired emergency engine. As stated in the BACT analysis and the final permit, the emergency engine shall comply with 40 CFR Part 60 Subpart JJJJ. Moreover, *Condition X.G.3.* has been added to the final permit which states that “the heat input to U3 shall only be PUC-quality pipeline natural gas.”

EPA has removed the testing requirement for PM₁₀ from the emergency engine from *Condition X.H.4.* in the proposed permit. EPA acknowledges that emissions from SI emergency engines combusting pipeline natural gas have low PM₁₀ emissions and that 40 CFR Part 60 Subpart JJJJ does not contain PM₁₀ emission limits or require monitoring or performance tests for PM₁₀ emissions. In order to demonstrate compliance with the PM/PM₁₀ emissions limit in Condition X.E.1, the permittee shall comply with *Conditions X.G.3.* and *X.J.10.* in the final permit. *Condition X.J.10.* states that “[f]or U3, the permittee shall maintain records of the following: hours of operation, purpose of operation, fuel usage on hourly basis and calculated PM/PM₁₀ emissions base on manufacturer emissions specifications and fuel usage data.”

- 72. Comment:** In the first sentence of Section 7.2.1 (NO_x, CO, PM, PM₁₀, PM_{2.5} Emissions), Step I-Identify all control technologies, "catalyzed diesel particulate filter" should be removed from the list. The proposed engine is a natural gas-fired, spark-ignition engine, and use of that control would not be appropriate. Similarly, the last sentence of that same paragraph should be removed.

Response: The Appendix to this document contains an updated BACT analysis for the natural gas-fired spark ignition emergency engine. The revised BACT analysis does not identify the diesel particulate filter or a particulate filter trap as appropriate control technologies for this unit.

- 73. Comment:** The NSPS limits provided in Table 7.2-1 (NSPS Limits for Engines) and Table 7.2-3 are from Subpart IIII, which covers compression-ignition engines. Limits from

Subpart JJJJ, which covers spark-ignition engines should be used instead. We suggest that Table 7.2-1 and Table 7.2-3 should appear as follows:

Table 7.2-1: NSPS Limits for 191 kW, Natural Gas-Fired, Spark-Ignition Engines

Engine Type	NO _x (g/hp-hr)	CO (g/hp-hr)	PM (g/hp-hr)
Non-emergency engine	1.0	2.0	0.7
Emergency Engine	2.0	4.0	1.0

Table 7.2-3: Summary of BACT for 191 kW, Natural Gas-Fired, Spark-Ignition Emergency Engine

Engine Type	NO _x (g/hp-hr)	CO (g/hp-hr)	PM (g/hp-hr)
Emergency Engine	2.0	4.0	1.0

Similarly, Table 7.2-2, which reflects the limits from Subpart IIII instead of Subpart JJJJ, should appear as follows:

Table 7.2-2: Summary of PTE for 191 kW, Natural Gas-Fired, Spark-Ignition Emergency Engine

Pollutant	Emergency Engine (tpy)
NO _x	0.056
CO	0.11
PM	0.028

Response: The Appendix to this document contains an updated BACT analysis for the natural gas-fired spark ignition emergency engine. The revised BACT analysis incorporates the appropriate emissions limits from 40 CFR Subpart IIII; however, the PTE summary for NO_x and PM have not changed from the proposal as the PTE limits for those pollutants were based on more stringent emissions limits supplied by the applicant's consultant in an April 26, 2012 email. See the Appendix for more detail.

74. **Comment:** Typographical Error- Section 7.3 under "Wet Cooling" (bottom of page 24) should indicate a three-cell cooling tower, not a two-cell cooling tower. This was reflected in the May 30, 2012 Updated Air Dispersion Analysis prepared by Environ and identified in the PSD permit.

To be consistent, the NO₂ annual NAAQS entry in Table 8.4-3 (SPI-Anderson Compliance with Class II PSD Increments and NAAQS) should read: "100 (53 ppb)."

Response: EPA acknowledges the comment. Although we do not produce a revised AAQIR as part of our final permit decision, we reviewed this comment and determined that it does not require a change in our final permit decision or additional analysis of the basis for our determinations.

Prevention of Significant Deterioration Permit Conditions (PSD Permit)

75. **Comment:** As stated in #6 above, the description of the cooling tower in the second paragraph under Project Description, and of ID U2 in Table 1, should be changed to read "three-cell," instead of "two-cell."

Response: The permit has been revised to incorporate the suggested language. EPA notes that this revision is descriptive in nature and does not have any substantive effect on the permit or EPA's analysis of the Project.

76. **Comment:** As stated in #1 above, the term "with Vibrating Grate" should be removed from Table 1.

Response: This term has been deleted from PSD Permit SAC 12-01. EPA notes that this revision is descriptive in nature and does not have any substantive effect on the permit or EPA's analysis of the Project.

77. **Comment:** Malfunction Reporting- Section IV of the PSD permit includes provisions for the Permittee to notify EPA for malfunctions. This is atypical of similar operating permits and usually reported directly to the designated Air District and otherwise copied to EPA as part of regular reporting. It may be desirable to add an item "D." to this section that allows for items IV.A thru C to be waived if notification is submitted to the Air District.

Response: Section IV will remain unchanged. EPA is currently the PSD permitting authority in the District. As a result, the permittee must report malfunctions to EPA Region 9. The PSD permit authorizes the construction and operation of emissions units associated with the Project; however it is not an Operating Permit under title V of the Clean Air Act. If the District adopts the PSD permitting program, then the permittee may request a permit revision that removes reporting requirements to EPA.

78. **Comment:** Typographical Error: Section X- Table 3 -the values for PM, PM₁₀, and PM_{2.5} (each at 41) do not match the AAQIR values (each at 42.1 respectively).

Response: This is not a typographical error. The values in Section 6 of the AAQIR reflect the changes in emissions resulting from the project, including estimates from the emergency engine and the cooling tower. Table 3 limits emissions only from the new boiler. The increase in emissions from the AAQIR, particularly for PM, is attributable to the PM emissions from the cooling tower and the emergency engine.

79. **Comment:** Air Pollution Control Equipment and Operations- Section X.B specifies for control equipment to operate continuously, but does not restrict this to operation of the boiler itself. It is impractical, and with respect to the electrostatic precipitator (ESP), can severely damage control equipment to operate without the boiler. As such, the sentence should be rephrased to indicate "During Boiler operations, Permittee shall continuously operate...".

Response: The permit has been revised to incorporate the suggested language regarding the air pollution control technologies during boiler operations. EPA notes that this revision

is descriptive in nature and does not have any substantive effect on the permit or EPA's analysis of the Project.

- 80. Comment:** The last sentence in this paragraph [Paragraph X.B.] is similarly concerning and indicates "Permittee shall also perform any necessary operations to minimize emissions so that emissions are at or below the emission limits specific in this permit." This implies that if conditions warrant, that the Permittee is required to minimize emissions potentially less than permitted. This creates subjectivity to the term "emission limits" and reduces the ability of the Permittee to perform adjustments to fine-tune, utilize approved fuels, or similar measures would otherwise be allowed at or below emission limits. As emission limits are already defined, this sentence is unnecessary and should be deleted in its entirety.

Response: EPA has replaced this language with the following: Permittee shall also to the extent practicable, maintain and operate equipment in a manner consistent with good air pollution control practice for minimizing emissions. This requirement imposes an obligation substantially similar to 40 CFR. §60.11(d) and encourages SPI to follow industry standards for reducing air emissions.

- 81. Comment:** Natural Gas Usage- As stated in #3 above, SO₂ emissions from the proposed project are not subject to PSD review. Section X.D.I of the PSD (page 7 of 17) indicates requirements for PUC-quality pipeline natural gas and limits of 0.20 grains per 100 dry standard cubic feet (dscf) on a 12-month rolling average basis and not to exceed 1.0 grains per 100 dscf at any time. This requirement is not warranted by this PSD permit for SO₂ and should be deleted. If not deleted, the requirement should be limited to providing PUC-quality natural gas and no requirements for sulfur content. SPI has spoken with PGE on available natural gas. While it is PUC grade, the sulfur content appears to periodically exceed the 0.20 grains/dscf throughout most of the state, including the Shasta County area. The current wording would potentially prohibit the facility from operating and as indicated above should not be restricted or limited by this permit. While we recognize that Sulfur in natural gas can contribute to PM emissions, the BACT determination including the ESP does not rely upon this for its determination and we respectfully request the change incorporated above.

Response: EPA considered pipeline natural gas in the BACT analysis for particulate matter as a means to reduce emissions of particulate from the Project due to its low sulfur content. In order to verify that the Project is utilizing low sulfur fuels, especially during startup and shutdown, the permit will continue to contain requirements that restrict the natural gas being combusted in U1 and U3 to Public Utility Commission (PUC)-quality pipeline natural gas. EPA agrees that specific sulfur content requirements may be difficult to achieve at the facility given the infrequent use of natural gas. As a result, sulfur content requirements on a grain per dry standard cubic foot basis have been removed from *Condition X.D.I*. Although *Condition X.D.I* has been revised, PM, PM₁₀, PM_{2.5} emissions limits for U1 have not changed from the proposed permit.

EPA notes that particulate emissions from the combustion of PUC- quality pipeline natural gas are expected to be lower than particulate emissions resulting from the combustion of

biomass. In addition, *Condition X.G.2.* in the final permit restricts the heat input to U1 on a 12-month rolling basis and, as noted in the response to comment #70, startup and shutdown events are expected to be infrequent in nature.

- 82. Comment:** PSD Non-Applicability and Startup Averaging Periods- As stated in #4 and #6 above, SO₂, VOC, and Pb emissions from the proposed project are not subject to PSD review. Therefore, the PSD permit should not include emission limits or permit conditions associated with these pollutants as in Table 5, item D.8, and Section H. All conditions associated with VOC, SO₂ and Pb should be deleted from the permit. Averaging periods in Table 5 should be changed as indicated in #6 above.

Response: EPA has removed the SO₂ emission limits from Table 5 and on *Condition X.D.8.* However, EPA has retained the initial source test requirements for VOC, SO₂ and Pb. EPA agrees that the source is not subject to PSD for SO₂, Pb, or VOC as outlined in the AAQIR. As outlined in SPI's 2010 application, SPI used AP-42 emission factors with fuel input throughput figures to estimate the potential to emit of the source. These estimates, however, are not based on specific fuel characteristics used on site. While the permit contains adequate fuel conditions that justify the technical assumptions in the AAQIR, EPA also recognizes that biomass may have a variable emissions profile depending on the cellulosic material that is combusted. Therefore, EPA believes the initial source test conditions for SO₂, VOC, and Pb are not excessively burdensome and are appropriate in this case.

EPA has revised the averaging times for emissions limits during periods of startup and shutdown in the final permit. See response to comment #70 for more discussion.

- 83. Comment:** Auxiliary Equipment Emissions Limitations- In Table 6 of Section X.E.1, the PM/PM₁₀ emission limit on U2 (the cooling tower) should be 0.272 lb/hr (hourly average), instead of 0.26 lb/hr.

Response: EPA acknowledges that the proposed permit included the improper hourly average emissions limit for PM/PM₁₀ for U2. In a May 2012 submission, the applicant revised the PM/PM₁₀ hourly emissions rate of 0.272 lb /hr from the cooling tower and included a revised modeling analysis for the Project's modeled impacts in the AAQIR reflected an hourly PM/PM₁₀ emissions rate of 0.272 lb/hr from the cooling tower. See online docket #I.11: *SPI-Anderson_updated_modeling_and_SUSDA_analysis-final_30MAY12* at Table 5. EPA has revised Table 6 in *Condition X.E.1.* in the final permit to show that emissions of PM/PM₁₀ from U2 shall not exceed 0.272 lbs/hr. EPA's BACT determination for PM/PM₁₀ emissions for U2 (cooling tower) on a lb/hr basis is *Condition X.E.1.* in the final permit.

- 84. Comment:** Auxiliary Equipment Emissions Limitations-In Item I, Table 6, the NO_x, CO, and PM/PM₁₀ emission limits shown for U3 (the emergency boiler recirculation pump engine) are taken from NSPS Subpart IIII for compression ignition engines, where they should have been taken from NSPS Subpart JJJJ, as indicated in #6 above. In *Section*

X.E.2, the reference to fire safety testing should be removed, as U2 is not used for fire safety.

Response: The permit has been revised to incorporate the appropriate emission limits following a revised BACT analysis for the emissions unit. For more detail, see the response to comment #9 and the Appendix to this document.

EPA acknowledges the commenter's clarification that the emergency engine is used for the water recirculation pump as needed, and not for fire safety purposes. Therefore, the reference to fire safety testing has been removed from *Condition X.E.2*.

- 85. Comment:** Operating Conditions and Work Practices-Section F. Item 7 refers to wood waste and storage bins and the requirement that these remain enclosed. The (wood) fuel shed, is by design, an open sidewall system and is not part of any pressurized or temporary bin. The phrase "not including the fuel shed" will clarify how this item is interpreted for compliance purposes.

Item 14 indicates "All leaks, spills and upsets of any kind shall be corrected or cleaned with 4 hours." It is assumed and needs clarification that this does not include any upset that may occur related to U1, U2, or U3 and that "with" was intended to be "within" 4 hours. Certain upset conditions may require timeframes longer than 4 hours, daylight hours, business hours, or other conditions that would otherwise prohibit compliance with this item. Please clarify the intent of this requirement and add the terms "as practicable".

Item 16 and 17- VOCs were indicated below SERs for this permit and conditions for VOCs should not apply.

Response: The permit has been revised to incorporate the language regarding the fuel shed.

Regarding *Condition X.F.14*, EPA incorrectly incorporated a wood waste and collection storage condition and has corrected the permit. This condition has been combined with *Condition X.F.5*. *Condition X.F.5* now states, in entirety, "Wood waste collection and storage bin leaks shall be minimized at all times. All identified wood waste collection and storage bin leaks, spills and upsets of any kind shall be corrected or cleaned immediately, within 4 hours, as practicable, to correct the leak, spill or upset."

The permit will retain the work practice standards relating to volatile organic waste and containers possibly holding VOCs or volatile organic waste. As demonstrated in the AAQIR the Project was below the significant emission rate for VOCs, however these conditions represent reasonable work practice standards that may prevent or reduce the incidence of fire and other possible sources of additional air pollution.

- 86. Comment:** Fuel Restrictions- Section F.2 specifies fuels different than those applied for in the PSD application by the Permittee, which included:
(from the PSD Application, Section 2.2 Fuel Supply)

"Fuel for the cogeneration unit will come from the existing SPI facilities in California at Arcata, Anderson, Shasta Lake, and Red Bluff, as well as in-forest materials from SPI-owned or controlled timberlands, and various sources of agricultural and urban wood wastes". This description has remain unchanged during the PSD process with EPA and would request that it either remain for the PSD permit, or be modified to reflect the wording below, as approved by the EIR and Special Use Permit. This wording is slightly more restrictive although not substantively different than originally proposed to EPA in the PSD application and is supported by the modeling and technical analysis for the proposed PSD.

The fuel description in the draft PSD is not consistent with the PSD application or the technical analysis and modeling supporting this project and would be inconsistent with the proposed operation of the facility.

(from the approved EIR and Special Use Permit, Shasta County- Use Permit 07-021, Condition 91 respectively)

Fuels burned in the cogeneration boiler shall be limited to the following:

- a. Waste pallets, crates, dunnage, manufacturing and construction wood wastes, tree trimmings, mill residues, and range land maintenance residues;
- b. All agricultural crops or waste;
- c. Wood and wood wastes identified to follow all of the following practices;
 - a. Harvested pursuant to an approved timber management plan prepared in accordance with the Z'berg-Nejedly Forest practice Act of 1973 or other locally or nationally approved plan; and
 - b. Harvested for the purpose of forest fire fuel reduction or forest stand improvement.

Response: EPA is familiar with the fuel terminology proposed in the application. However, the facility will only be allowed to burn biomass, traditional non-waste fuel and not be permitted to burn waste that is not considered a traditional fuel. The source is not considered a solid waste incinerator and has not satisfied the appropriate performance standards requirements associated with commercial and industrial solid waste incinerators.

EPA understands the source's interest in streamlining its fuel definitions with other regulatory agencies. However, the source will not be able to burn waste that is not considered a traditional fuel. Therefore, *Condition X.G.1.* in the PSD permit restricts fuel to natural gas and the following:

- a. Untreated wood pallets, crates, dunnage, untreated manufacturing and construction wood debris from urban areas;
- b. All agricultural crops or residues;
- c. Wood and wood wastes identified to follow all of the following practices;

- i. Harvested pursuant to an approved timber management plan prepared in accordance with the Z'berg-Nejedly Forest practice Act of 1973 or other locally or nationally approved plan; and
- ii. Harvested for the purpose of forest fire fuel reduction or forest stand improvement.

87. Comment: Performance Tests- As indicated earlier in item 14 above, no performance testing is warranted by this PSD permit for items H.1.e (Pb emissions), H.1.b (SO_x emissions), and Item 2.a (both for SO₂ and Pb emissions) and these should be respectfully removed from the proposed PSD permit. Similarly item 2.c does not provide any flexibility from the facility's maximum steam production rate for PM testing. In practical application, a percentage of the maximum steam rate is applied to allow operational flexibility while maintaining permit limits. To this extent, we request that the PSD permit allow for a 90% of the maximum steam rate for performance testing.

Item H.3.d (cooling tower) requires establishment of procedures to ensure TDS limits are not exceeded. With a 0.0005% drift rate, TDS is not measurable in practice and unnecessary at that performance standard. This item should be deleted in its entirety in consideration of the drift rate imposed.

Item H.6 for sulfur gas content-similar to item 13 above. This item is unnecessary and not warranted as a condition for this permit and appears unachievable based on review of available natural gas supplies (PGE). Similarly, PGE performs testing on entire service areas, not specific distributions to facilities. As such, the requirement for the Permittee to ensure that the fuel tested is representative of the fuel delivered to the site is impractical to achieve. Instead, we request that the PSD permit request that the permittee provide sulfur content reports (from the PUC Quality Natural Gas distributor- PGE in this instance) with no numerically defined requirement on the sulfur content.

Response: EPA has retained the initial source test requirements for VOC, SO₂ and Pb because EPA believes the initial source test conditions for SO₂, VOC, and Pb are not excessively burdensome and are appropriate in this case. See response to comment #82 for further discussion.

EPA disagrees with applicant's comment regarding PM testing in *Condition X.I.2.c*. PM testing shall be performed at the maximum steam rate with the appropriate fuel according the manufacturer's specifications. As stated in *Condition X.I.5*. "Upon written request from the Permittee, and adequate justification, EPA may waive a specific annual test and/or allow for testing to be done at less than maximum operating capacity." The applicant has not provided sufficient information for the maximum steam rate requirement to be permanently waived.

EPA acknowledges that the permit does not establish limits for total dissolved solids (TDS). However, the permittee will still be required to establish maintenance procedures that ensure the integrity of the drift eliminators and compliance with recirculation rates. Moreover, the permittee will still be required to comply with PM/PM₁₀ emission limits

from U2 as specified in X.E.1. rates and calculated according to Condition X.I.3.b. Condition X.I.3.d. in the final permit states that the permittee shall do the following. :

“Establish a maintenance procedure that states how often and what procedures will be used to ensure the integrity of the drift eliminators and to ensure compliance with recirculation rates. This procedure is to be kept onsite and made available to EPA and District personnel upon request. The permittee shall promptly report any deviations from this procedure.”

The permit has been revised (*See Condition X.J.1*) to incorporate the suggested language regarding the record of sulfur content reports for natural gas used on site.

- 88. Comment:** Recordkeeping and Reporting – Item I.9 of the PSD permit indicates "for U1, daily records of fuel received other than natural gas shall be maintained. These records shall include a detailed description of fuel supplier, fuel type and tons received." U1 receives fuels from the facility itself that are directly conveyed to the fuel delivery and handling system. The facility similarly receives fuels from outside sources that are weighed and tracked - for purposes of this comment, these are facility received or inbound fuels. Item I.9 should clarify that on-site derived fuels are exempt from recordkeeping regarding tonnage. For purposes of determining compliance, estimates of fuels may be derived from the boiler rating, steam flow, and heat value of the fuel (onsite or offsite) to determine an overall usage.

Response: *Condition X.J.9* (Condition X.I.9 in the proposed permit) will remain unchanged. The BACT determinations for the Project and the emissions limits for U1 in the final permit are on a lb/hr and lb/MMBTU heat input basis. In its application SPI stated that the boiler will be rated at 468.0 MMBTU/hr based on heat input. *See* online docket #I.01: *SPI-Anderson PSD Permit Modification Application_25MAR10* at 3. In order to readily verify compliance with the emission limits and fuel conditions in the permit, the permittee must be able demonstrate that all fuel combusted in U1 is appropriately monitored and recorded. All fuels, including those derived on-site, must comply with fuel conditions in *Section X.G.* of Permit SAC 12-01. Without appropriately accounting for all fuel received the permittee would seemingly be able to inappropriately back-date, potentially mislabel and assume that all unaccounted materials combusted in U1 were compliant fuels generated onsite.

Appendix

BACT for Emergency Engine

The project includes a 256hp (191kW) natural gas-fired spark ignition emergency engine to run a water recirculation pump for the boiler. The limited operation of this unit results in minimal annual emission rates. This equipment is subject to BACT for NO_x, CO, PM, PM₁₀, PM_{2.5}.

In the AAQIR and draft permit, EPA incorrectly identified the proposed emergency engine as a compression ignition natural gas engine. During the public comment period, the applicant noted that the proposed unit was, in fact, a spark ignition natural gas fired emergency engine. Taking this information into account, EPA has revised its BACT analysis for the emergency engine.

A top-down BACT analysis has been performed for the spark ignition emergency engine and is summarized below.

7.2.1 NO_x, CO, PM, PM₁₀, PM_{2.5} Emissions

Step 1 -- Identify all control technologies

The control options for NO_x emissions from engines include SCR, NO_x reducing catalyst, NO_x adsorber, catalytic converter, and oxidation catalyst. A catalytic converter and oxidation catalyst are also control options for CO emissions.

The emergency engine will be required by the final permit to be in compliance with NSPS requirements, including emission limits. The emergency engine will also be subject to operational restrictions. Different types of engines have different emission requirements based on the type of engine being purchased. Engine manufacturers may need to employ some of the control technologies identified above in order to comply with the NSPS emission limits, depending on the type of engine and the applicable limits. The applicant is proposing to install an emergency engine for infrequent recirculation pump needs. At a minimum, SPI must purchase an engine that complies with the NSPS and meets the emission requirements for emergency engines. However, we note that the applicant could purchase an engine that meets the NSPS standards for non-emergency engines, which have more stringent limits, and operate it as an emergency engine. As a result, this review identifies the control technologies to be:

- NSPS-compliant emergency engine
- NSPS-compliant non-emergency engine
- Operational restrictions (e.g., limits on the hours of operation)

Step 2 – Eliminate technically infeasible control options

All of the control technologies identified are assumed to be technically feasible.

Step 3 – Rank remaining control technologies

The available control technologies are ranked according to control effectiveness in Table 7.2-1.

Engine Type (191kW)	NO _x (g/hp-hr)	CO (g/hp-hr)
Non-emergency engine	1.0	2.0
Emergency engine	2.0	4.0

The NSPS for spark ignition internal combustion engines does not contain emissions limits for PM, PM₁₀ or PM_{2.5}. However, the applicant submitted emissions estimates for the emergency engine that are more stringent than the NSPS standards for a natural gas spark engine for NO_x and PM, PM₁₀ and PM_{2.5} in an email on April 26, 2012. *See online docket I.31: SPI-Anderson to EPA re Emergency Engine Emissions 26APR12.*

Step 4 – Economic, Energy and Environmental Impacts

Due to economic impacts and limited environmental benefit, requiring add-on controls or compliance with the NSPS for non-emergency engines would be impractical in this case. The additional emission reductions would have very little environmental benefit and not justify any additional cost. We note that the expected emissions from the emergency engine are 226 lbs/year of CO, 78 lbs/year of NO_x and 3 lbs/year of PM.

The draft permit contained an hourly NO_x emission limit for the emergency engine that is more stringent than those found in 40 CFR Part 60 Subpart JJJJ for spark ignition emergency engines. This hourly limit was used to assess annual PTE of the emergency engine in the AAQIR and has not changed.

In addition, the draft permit contained hourly emissions limits for PM, PM₁₀ and PM_{2.5}. The current NSPS for spark ignition natural gas fired engines does not have limits for PM, PM₁₀ and PM_{2.5}. The hourly limit in the draft permit was used to assess annual PTE of the emergency engine in the AAQIR and has not changed.

The draft permit also contained an hourly CO emissions limit that is less stringent than the 40 CFR Part 60 Subpart JJJJ limits for emergency spark ignition engines; in the final permit, EPA will include the more stringent Subpart JJJJ emergency engine emissions limit. Our revised calculation of annual PTE for the emergency engine reflects this NSPS limit.

As illustrated in Table 7.2-2 the potential emissions from the emergency engine (based on 100 hours of operation per year and complying with permitted and NSPS for natural gas spark ignition emergency engines) has not changed for NO_x and PM, PM₁₀ and PM_{2.5} and revised lower for CO. A thorough review of other BACT determinations was not performed because it is very unlikely that a more detailed review would change the final determination due to the annual emission rates associated with the proposed limits and the operational restriction of 100 hours annually.

Table 7.2-2: Summary of PTE for 191 kW Emergency Engine

Pollutant	Emergency Engine (tpy)
NO _x	0.039
CO	0.11
PM, PM ₁₀ , PM _{2.5}	0.0011

Step 5 – Select BACT

Based on a review of the available control technologies, we have concluded that BACT is limiting the hours of operation to 100 hours and the permitted emission limits listed in Table 7.2-3. It is assumed that newly purchased engines would be the most energy efficient available and that operating in compliance with NSPS requirements will ensure that each engine is properly maintained and as efficient as possible. Again, we note that the expected emissions from the emergency engine are 226 lbs/year of CO, 78 lbs/year of NO_x and 3 lbs/year of PM.

Table 7.2-3: Summary of BACT for 191 kW Emergency Engine

Pollutant	Limit	Averaging Time	Source
NO _x	0.78 (lb/hr)	Hourly	Permit
CO	4.0(g/hp-hr)	3- Hour	NSPS
PM, PM ₁₀ , PM _{2.5}	0.0216 (lb/hr)	Hourly	Permit